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BY

CHARLES ROBERT DRYSDALE, M.D.,

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON; FELLOW OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND; SENIOR PHYSICIAN TO THE METROPOLITAN FREE HOSPITAL; PHYSICIAN TO THE RESCUE SOCIETY'S LOCK HOSPITAL; LATE CONSULTING PHYSICIAN TO THE FARINGDON GENERAL DISPENSARY PHYSICIAN TO THE NORTH LONDON CONSUMPTION HOSPITAL; AND HON. SEC. HARVEIAN SOC.'S V. D. COMMITTEE OF 1867.

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PREFACE.

In former editions of this work, the first of which appeared in 1863, I have been accustomed to quote very freely from the opinions of authors in England, France, and Germany, on the much disputed questions arising in the discussion as to the Nature and Treatment of Syphilis. What, in my opinion, has hitherto kept many of the important points relating to the so-called 'contagious diseases' in comparative obscurity, has been the fact that but few medical men have cared to discuss the matter openly.

Recently, owing doubtless to a change in public sentiment (which might easily be traced to its origin in the remarkable revolution which has taken place in philosophy during the 19th century), there has been quite an eager desire on the part of the most distinguished physicians and surgeons of London, Paris, and New York, to contribute to the knowledge of the Pathology of Syphilis. Thus, in London, in the years 1876 and 1877, two very remarkable discussions, on the general Pathology of Syphilis, and on Visceral Syphilis, were held, in which the following well-known gentlemen afforded the great light of their experience: Dr. Barlow, Dr. Broadbent, Dr. Buzzard, Dr. Crisp, Dr. Davidson, Dr. H. Fagge, Dr. Farquharson, Dr. W. Fox, Dr. S. Gibbon, Dr. Goodhart, Dr. Gowers, Dr. Greenfield, Sir W. Gull, Mr. B. Hill, Mr. Hulke, Mr. J. Hutchinson, Sir W. Jenner, Mr. H. Lee, Mr. de Meric, Dr. Moxon, Sir J. Paget, Mr. G. Pollock, Dr. Robinson, Mr. Simon, Dr.

Pye Smith, Mr. T. Smith, Mr. Venning, Dr. Wilks, Mr. J. Wood, etc.

The Pathology of Syphilis was admirably explained by the various eminent speakers in these debates; and this fact, added to the knowledge gained in preceding and subsequent discussions on the Treatment of Syphilis, held in Paris, 1867, and in Philadelphia in 1876, has enabled me to place before my readers a far more complete sketch of this all-important disease, than I have been in a position to do in any former edition. My hope is that any earnest student, who does me the honour to read this little treatise, will be able to make up his mind, from the evidence before him, without any need of dogmatic assertions on my part.

CHARLES R. DRYSDALE, M.D.

17, Woburn Place, London,
June, 1880.

ON GONORRHŒA.

CHAPTER I.

THIS disease is now called Blennorrhagia by French writers, in order to avoid the inference that there is any seminal fluid lost, as the word Gonorrhœa would indicate. Gonorrhœa is said to be a *special* inflammation of the mucous membrane of the urethra or vagina, and to differ somewhat from urethritis, which is *simple* inflammation of the same membrane. As to whether the writers of ancient times were familiar with this malady or not, there is great difference of opinion. One writer, the late M. Auzias Turenne, believed that they were not; whilst others find notices of it in the book of Leviticus, &c. It is probable, the author thinks, that the complaint has always existed; although it is certainly strange that such an unmistakable affection should not have been minutely described by Celsus and Galen. Astruc is of the opinion that it was unknown to the ancients, whilst M. Ricord seems to be of a contrary opinion. Of all diseases, gonorrhœa is, perhaps, the most commonly met with in large cities. Probably six or seven cases of gonorrhœa occur in London to one of hard or soft sores, or even far more than this.

The most ordinary cause of gonorrhœa is contagion; indeed, some authors seem to think that this is the only cause of the malady. 'When a man,' says Cullerier, 'comes to consult you concerning a gonorrhœa, a hundred to one he has contracted it from a woman.' M. Ricord, however, says 'there is nothing more common than to find women, who have communicated the most acute attacks of gonorrhœa in the male, and who are only affected with a scarcely purulent

uterine catarrh. Women frequently give gonorrhœa without themselves having it.'

M. Alfred Fournier examined, on more than sixty occasions, women, from whom gonorrhœa had been contracted, and came to the conclusion that most frequently gonorrhœa does not arise from specific contagion, but is caused by other means, such as venereal and alcoholic excesses; to which he adds the ordinary pathological discharges of women, and even the menstrual flow. Mr. W. F. Teevan is of opinion that 'it is impossible to say whether a given discharge in the male or female is specific. Some of the most virulent gonorrhœas are given by women suffering from leucorrhœa. Undue acidity of the natural vaginal secretion will give gonorrhœa.' Mr. H. Lee (edition 1871, vol. II., page 328) says, 'it seems certain that gonorrhœa in the male may arise from intercourse with a woman in whom no changes in the genital organs can be detected upon minute examination with the speculum.' Dr. Bumpstead (page 59 of his work) speaks of gonorrhœa originating in connection, just before, or during the menstrual period, or when leucorrhœa exists, and when no change can be discovered in the female generative organs. He reminds us that the ophthalmia of new-born infants is often due to leucorrhœa, so that in cases of gonorrhœa in the male, the suspected woman should not be accused of having the disease, without great care. The vulvitis of young children, too, is an example, according to Bumpstead, of a clearly contagious secretion arising from slight derangement of health in the child. He maintains that the pus from such vulvitis will cause conjunctivitis if conveyed to the eye.

In some cases, then, we find absolutely nothing the matter with women from whom men have contracted acute gonorrhœa; at other times, urethritis, vaginitis, ulceration of the uterine neck, &c. Affections of the female organs, however, which develope muco-pus are most likely to cause gonorrhœa in the male. Still there are cases where gonorrhœa seems to arise without any very special irritant in the female organs, and it appears that it occasionally, though very rarely, even develops itself in husbands after connection with their wives, who are, to all appearance, quite healthy. Injections of irritating fluids and the passage of catheters have sometimes been known to produce a virulent discharge; but, according to the late Mr. J. D. Hill, this discharge soon subsides when the cause is removed,

and does not require any local treatment, by injection or otherwise. Gonorrhœa, then, is not probably any very specific inflammation. Persons who have suffered from an attack of the malady are very subject to relapses when they commit the slightest excess. It is for these reasons that chancres are so much more frequently received from women of the streets than gonorrhœa is; which, indeed, is contracted very frequently, it is alleged, from intercourse with even perfectly healthy women. M. Fournier, for instance, found that, out of eight hundred and seventy-five cases of syphilis, six hundred and twenty-five had been received from public women; whilst out of three hundred and eighty-seven cases of gonorrhœa, only some fifty were said to have been contracted from prostitutes.

A short period elapses between the time of contagion and the appearance of the discharge. Some say that this is a 'period of incubation;' others, that it is merely analogous to what happens between the time of catching cold and that of the appearing of the bronchial or rheumatic affection which ensues. However this may be, the author has generally found that some four or five days elapse after infection before the discharge appears. The late Mr. J. D. Hill noticed it on the fourth day in a hundred cases, on the third day in fifty cases, and on the fifth day in fifty cases. A surgical friend has mentioned that, in his own person, gonorrhœa did not appear for more than three weeks. The author suspects that in this case there must have been chancre and possibly syphilitic infection. Even the period of four to six days generally observed is quite notable, and is very different from what occurs in the case of catarrh following on cold feet or chill, which almost always comes on in a few hours.

The invasion of the complaint is usually revealed in the male by a sensation of tickling at the end of the penis, and abnormal feeling of heat on micturition. The lips of the meatus are glued together by opaline mucus, and are red and inflamed. After a little while, the meatus becomes redder, the heat of the urine greater, and the discharge becomes yellowish, and subsequently yellow coloured. In a few days after this the discharge becomes of a greenish hue, the erections painful, preventing sleep, especially at the latter part of the night, and the penis and glans become swollen. After this acute stage has lasted for a few days, it gradually declines in severity; the erections become less painful; and

lastly, the discharge alone remains, changing into a catarrh, which gradually disappears. The first stage of gonorrhœa lasts from two to four days: the second, from one to three weeks: the third indefinitely. Probably the inflammation proceeds deeper and deeper in the urethra as the case progresses. If left untreated, gonorrhœa rarely terminates in less than three months. In the acute stage, the prepuce is sometimes œdematous. In some cases the pain felt in micturition is very great indeed; so that patients urinate as rarely as they can, in order to avoid it. Sometimes absolute retention occurs, and the late Mr. J. D. Hill, of the Royal Free Hospital of London, had, in the month of May, 1871, occasion to puncture the bladder by the rectum, on account of retention in the acute stage of gonorrhœa, as no catheter could be passed, and the bladder was greatly distended with urine. Such a case is most rarely met with. Most generally there are no constitutional symptoms observed, and gonorrhœa remains quite a local affection. Buboes occur in about seven per cent. of all cases of gonorrhœa. They are only 'sympathetic.'

The affection commences near the meatus, and proceeds from before backward to the spongy, membranous, and prostatic portions of the male urethra. M. Desormeaux says that, on endoscopic examination, he has found the inflammation on the eighth day extending through the anterior half of the canal, the mucous membrane being reddened and without polish, and with superficial ulcerations. In older cases the same lesions are seen further up the canal, in the bulb, membranous portion, and prostate. After a certain time, the inflammatory appearances become localised in a more or less extended portion of the mucous membrane of the urethra. In old gonorrhœas, however, the localised inflammation is apt to insinuate itself into the follicles of the urethra, and extend to the subjacent parts, thus causing thickening and induration.

The author is inclined to agree with Mr. H. Lee, that 'if the cause of gonorrhœa in the male be a morbid fluid from a syphilitic woman, there seems no reason why he may not get syphilis from it.' Several cases of tertiary syphilis in the male seem to arise solely from gonorrhœa as a primary source of infection. This opinion was held by many of the old writers on syphilis, such as Swediaur, Pearson, John Hunter, and others of great note. John Hunter relates, in his classical work on syphilis, how that a practitioner of medicine inocu-

lated a man (probably himself) with the pus from gonorrhœa in a male patient, on the prepuce; and that, in consequence of this inoculation, chancres appeared, followed, some time subsequently, by secondary eruptions. M. Ricord admitted this; but maintained that, whenever urethritis was syphilitic, there would be found a urethral chancre to account for it. The initial lesion in syphilis is, however, as is well known, sometimes a very trifling one: and it would seem that urethritis in the male may occasionally, as alleged by Dr. Morgan, be due to secondary syphilis, when, as in the case of contagion from mucous tubercles in the mouth, it may possibly give rise to syphilis in a female not previously infected. The cases cited by M. Ricord in his splendid book of plates of venereal diseases (*iconographie*) are not, we think, syphilitic affections of the urethra at all, although possibly chancroids; and when he described them, he was, as is well known, of the opinion that the soft sore was the initial lesion of syphilis. Subsequent experience has refuted this idea: and hence we may suppose that where gonorrhœa in the male is syphilitic in character, it is either accompanied by some slight primary lesion due to mucous tubercles, or erythema of the mucous membrane of the urethra.

In very fortunate cases, and when well treated, gonorrhœa may last but a week or two, in others it lasts two or three months; but whenever it has shown a tendency to chronicity, there is no knowing how long it may last; so that we meet with gonorrhœas which have continued for many years. It is the gleet, which remains after the cure of many acute cases, which is so difficult to remove. Remedies, in such instances, seem to have no effect. As a general rule, the first attack of gonorrhœa is acute and painful, but is usually easy of cure. Subsequent attacks, however, are far more difficult to manage; relapses, too, are very frequent under these circumstances, on the occasion of the least error in diet, even after the running has ceased for a week or ten days; although Hunter's assertion, that 'the relapse may take place after the running has ceased for a month,' is rather doubtful. Sometimes the use of injections is very ill borne by the urethra, and the discharge becomes serous and mingled with blood; whilst dysuria, and even retention of urine, may ensue. As to gleet, this is a very common affection, even among persons who do not suspect its existence in any way, and it must not be confounded with chronic gonorrhœa. In the latter, the discharge remains purulent,

yellow, and rather abundant; whereas, in gleet, there is but little pus in the discharge, and the canal is merely made moist by a slight colourless viscous fluid, seen in the morning. In France, this is denominated the *goutte militaire*. Any fresh contagion will arouse acute symptoms in a man suffering from chronic gonorrhœa, but the complaint gradually dries up, and eventually becomes gleet; gleet, however, may continue for the life-time of the individual. It must be kept in mind always that gonorrhœa, even when chronic, is, in some cases, quite innocent of any evil effects; whilst, in others, stricture, thickening, and ulcerations of the mucous membrane, may all be the consequences of a chronic case. Mr. W. F. Teevan says, that 'after a gleet has lasted six months, the endoscope and *bougie à boule* will always show pathological changes.' Gleet, when not a symptom of stricture, is usually of but little clinical importance.

In the affection called *chordee*, the urethra, the chief seat of the inflammation, runs along the under surface of the penis. Plastic lymph is effused along the canal, gluing the tissues together, and rendering this part of the penis less extensible than the rest. Hence, in a state of erection, the spongy portion surrounding the urethra, being incapable of yielding to the extension, acts like the string of a bow, and thus 'chordee' is produced.

It is now well known that the pathological cause of gonorrhœa is the urethral mucous membrane being red and injected, sometimes only to a limited extent, as in the fossa navicularis, or in the membranous or prostatic region of the urethra. The use of the endoscope has been peculiarly valuable in respect to the information it has afforded on this point. Sometimes, however, in cases of gonorrhœa, the urethra seems after death to be almost healthy. Besides the redness and swelling of the mucous membrane, in one or two cases small granulations have been thought to be noticed in the lower wall of the prostatic region, resembling granular conjunctivitis. This is denied by Dr. Dick, of London, and by Mr. W. F. Teevan. Ulcerations are not met with, *i.e.* loss of substance of the mucous membrane, but exfoliation of the epithelium is sometimes noticed. This reminds us of what is seen on the os uteri in the female, in cases of non-cancerous, or so-called ulcerous, affections. In chronic gonorrhœa, the colour of the mucous membrane becomes more dusky; and, in some cases, excoriations of

the urethra may take place, or granulations or various disorganisations of the membrane may arise, the membrane becoming thickened, less elastic, firm, and even quite leathery or hardened. Sometimes, but rarely, these indurations extend through a great portion of the spongy part of the canal; at other times they are merely ring-like. They are made up by the normal tissues becoming infiltrated with pathological products, analogous to exudations in other regions. The mucous membrane becomes sometimes twice, or even four times, as thick as it is in health; hardened, and resistant. Sometimes we notice urethral bridles, the origin of which is not quite clear. Desormeaux speaks of urethral granulations, or inequalities of the surface of the mucous membrane, of a mulberry aspect, from the size of a mustard seed up to a millet seed. Only one of such is seen by the endoscope; and they are very apt to lead to stricture of the urethra.

Practitioners are too apt to consider as gonorrhœa all cases of suppuration from the urethra, but we must remember that pus evacuated from the male urethra is not necessarily the consequence of gonorrhœa. The prostate, seminal vesicle, or neck of the bladder, may be the source of the pus; and, hence, some care is required in ascertaining the history of a case of gonorrhœa. Chancre in the urethra, or simple urethritis, may cause discharge of pus. Generally speaking, we may say of gonorrhœa, that it is most frequently an affair of little moment; but that sometimes it is serious, although very rarely likely to lead to incurable lesions. The chronic continuance of clap may lead to grave results, and especially to urethral stricture, which may end in fatal affections of the urinary passages and kidneys in the male sex. In this aspect, gonorrhœa is one of the most important diseases in the male.

With regard to the treatment of gonorrhœa, the first point is that which refers to the remedies called by some 'abortives.' If we could at once put an end to gonorrhœa in all cases, it would be a very great triumph of therapeutics; since, as Ricord truly observes, the accidents which follow it are in direct proportion to its duration. The idea proposed in abortive remedies in clap is that of substituting an ephemeral and *simple* inflammation in place of a *specific* inflammation of the urethra; and, to this end, irritating injections, such as ten or fifteen grains of nitrate of silver to an ounce of distilled water, are used. This practice was not unfrequently followed some years ago by Dr.

Mauriac, in the Hôpital du Midi, at Paris. Other practitioners prefer to use, in the first three days of gonorrhœa, whilst the inflammation is supposed to extend no further than the fossa navicularis, an injection of *one* grain of nitrate of silver in six ounces of distilled water, three or four times a day. Dr. Diday, of Lyons, prefers ten grains; and, in New York, a small sponge dipped in such a solution is introduced by some practitioners as far as the navicular fossa. The penis may also be immersed in very hot water during the acute stage—*as hot as can be borne.* The patient may drink a draught, containing twenty grains of bicarbonate of potash and forty minims of tincture of henbane occasionally, and take a brisk purge. One injection of ten grains is occasionally sufficient, according to some, but this must be repeated daily, if necessary, for a time. When such injections are made, the pain is at first considerable; the meatus swells, as well as the penis, and there is a serous or serosanguinolent discharge, with much pain in micturition on the first occasion. This is followed by a yellowish discharge, lasting some twenty-four hours, which then diminishes, in successful cases, and becomes suppressed in a few days, when a cure takes place.

It must be confessed that in some cases, the consequences of these very concentrated injections are rather awkward, and the inflammation and pain they excite rather distressing to the patient. Œdema of the prepuce and great pain in micturition may ensue among other effects. The accidents that may arise, such as cystitis, orchitis, or retention of urine, are, however, not often of any real gravity; and the practice is not to be blamed for causing stricture, or other lesions of the canal. Such abortive remedies are, of course, used only at the outset of the disease. Injections of several grains of chloride of zinc to an ounce of water may also be used, with the same view, *i.e.* of cutting short the inflammation. If this plan be adopted when the discharge is only some days old and not at its acme, it is often successful. Even if, on the second or third day, the pain and other symptoms are not very acute, it should be adopted. It is not necessary to throw the injection far into the canal in such cases. The urethra may be compressed some three inches down, so as to prevent the injection going further than the inflammation is likely to have extended. Thus, cystitis or orchitis will not be likely to occur. A kind of syringe has been devised and used by Mr. A. Durham, of

Guy's Hospital, London, which is passed into the urethra, further than the inflammation is supposed to extend; and so constructed that, when the piston is pushed down, the injection is thrown towards the meatus. This mode has been much practised at the Hôpital du Midi by Dr. Mauriac.

On the Continent, and in this country, it is still the custom, among many practitioners, to prescribe, at the outset of the disease, large quantities of balsamic remedies internally. The curative effect of copaiba, or cubebs, is far greatest in the acute stage of gonorrhœa, but it is curative in all stages of the disease, when used in large doses. The French make up a preparation called 'drageés,' which contain cubebs and iron, which is occasionally useful, and the oil of sandal-wood, first introduced by Dr. T. Henderson, of Glasgow, is sometimes of service. This oil is best taken in capsules, and twelve or twenty of these taken daily will sometimes cure a gonorrhœa. One ounce of sandal-wood oil may be mixed with three fluid ounces of rectified spirits, and two fluid drachms of the mixture given thrice daily in water. As much as an ounce of cubebs or copaiba daily is prescribed at first, by some French practitioners, so as to 'strangle the disease at its birth.' This is continued for six or eight days, in decreasing doses, and then abandoned if not successful. Some say that this plan often fails, and, as it is a most unpleasant kind of treatment, it probably will never again come much into vogue in this country.

Mr. W. F. Teevan says, 'I never use medicine internally except there be direct indications. I have known patients' digestive organs destroyed for life by copaiba.' His favourite injection is two grains of tannin to a drachm of water; but, before he orders any particular injection, he guages the sensibility of the urethra by throwing in some injection, and gradually increasing the strength. M. Ricord used to be greatly in favour of balsamics, associated with astringent injections, as a method of aborting the disease at its birth. The injections made use of by M. Ricord are those of half a grain of nitrate of silver to an ounce of distilled water, or of thirty grains of sulphate of zinc with thirty grains of acetate of lead in six ounces of water. Another injection, approved of by the great 'master,' contained, in six ounces of distilled water, fifteen grains of sulphate of zinc, thirty grains of acetate of lead, with one drachm of tincture of opium, and one drachm of tincture of catechu. These injections are directed to be used thrice a

day, and retained about three minutes in the canal. This treatment is kept up some fifteen days until a cure is effected, which is often the case, and large doses of cubebs are ordered at the same time. But A. Fournier, a pupil of Ricord, says it failed oftener than it succeeded; so that, according to that writer, this plan of treatment must not be continued for longer than a week, if it do not prove successful. Mr. B. Hill says that 'any injection that smarts is not the right one, and is too strong.' Mr. L. Parker used weak injections of half a grain of sulphate of zinc to an ounce of distilled water. Injections should not be used when there is inflammation or irritation of the neck of the bladder or prostate. A syringe containing about three drachms may be used in the decline of the disease, and the strength of the injection should be such as to create a slight uneasiness for a few minutes. Acetate of zinc, three grains per ounce, is an excellent injection; or sulphate of zinc, one grain to the ounce; alum, three grains to the ounce; or liquor plumbi subacetatis, as much as two drachms to an ounce.

It must be remembered, that the habits of the patients have much to do with the success of any line of treatment of gonorrhœa. Continence must be absolutely observed, and kept up for at least a fortnight after the discharge ceases; whilst all sexual excitement, such as the frequenting of balls, theatres, etc., should be studiously avoided. Coffee is injurious, and all alcoholic fluids, especially beer. Dr. Bumpstead, of New York, speaks strongly against the use of tobacco in gonorrhœa, believing that it tends to keep up urethral discharge, and involuntary seminal emissions at night. I quite agree with him in this. Violent exercise of any kind is most injurious. A suspensory bandage should be worn to brace the testes well up toward the abdomen, and the parts should be kept scrupulously clean; whilst the patient should be warned of the great danger to sight, which may result from putting his fingers to his eyes after handling the organ. Some persons, at the outset of the acute symptoms of gonorrhœa, give barley-water to drink, and bicarbonate of soda, as in the prescription used by Fournier:—one drachm of bicarbonate of soda, with an ounce of sugar, and two drops of essence of lemon, dissolved in a quart of water, as a drink during the day. Mr. Weeden Cooke, late surgeon of the Royal Free Hospital, in his excellent pamphlet on Gonorrhœa, recommends a somewhat similar plan of treatment. Warm baths are useful; but,

truly, it is an awkward idea, that the patient may spread the contagion to some other person's eyes by the use of a public bath. Some French authors advise the use of leeches to the perinæum in the acute stage. By using such antiphlogistic remedies alone, a certain number of patients get well. The time for the cure of a gonorrhœa may be estimated at three or four weeks, when carefully treated.

For chordee and nocturnal erections, a number of remedies, such as camphor, bromide of potassium, and others, have been recommended; but they are not of very much use. A pill containing one quarter of a grain of extract of belladonna, one grain of camphor, and two of extract of hyoscyamus, is sometimes useful, taken at bedtime. Morphia or opium is far more efficacious, in doses of one-third of a grain of acetate of morphia, in a pill at bedtime, or as a suppository; or an enema of twenty drops of laudanum at night. Mr. Teevan uses a suppository of five grains of camphor with two of opium, and advises the patient to sleep with many pillows under the head, and with the rectum and bladder empty. Fifteen grains of Lupulin may be given triturated with sugar, at bedtime. The genitals should be bathed with hot water before going to bed, to prevent *chordee*. The patient must avoid all sexual excitement, and sleep cool and on the side; also micturate whenever he awakes. The decoction of uva ursi or infusion of buchu may be drunk when the disease is at its acme.

When the acute stage has quite passed by, many persons still, especially in France, administer large doses of the balsams, such as copaiba, cubebs, matico, etc. The first two of these are the most useful. French writers recommend that such internal remedies should not be used, so long as there is much pain in micturition. The dose of cubebs is from half an ounce to an ounce daily; that of copaiba, three drachms. The taste of both of these drugs is most nauseous; and this is, perhaps, one of the causes why in London they are so very seldom prescribed in gonorrhœa. Copaiba should only be taken in capsules, and procured of the most honest druggists; and cubebs is only bearable when made up into balls by the help of some adjuvant, such as the syrup of tar used for that purpose in Paris. At the Hôpital du Midi, in Paris, one of the prescriptions for gonorrhœa is as follows: Cubebs, two and a half drachms; copaiba, forty-five drops, in as much syrup of tar as is required; to be made into balls, and taken in the course of twenty-four hours. Whilst this is being taken, patients are advised to

drink very little. Such treatment often makes the discharge cease at once, but a cure can only be effected by continuing the medication some time, say a week or ten days. It may be used where patients either cannot or will not use injections, as is sometimes the case, since there is a popular idea that injections are the cause of stricture.

The treatment by injections is the great treatment of gonorrhœa. Some persons, and among others, the author, use injections at all periods of the discharge; and Mr. J. Hutchinson seems to argue (*British Medical Journal*, 1870), that 'the more grave the inflammation, the stronger ought to be the injections used.' Fournier uses them only after the acute symptoms have subsided. Three injections a day at least should be used, the fluid being kept in the urethra three minutes, and this should be continued for a week after the discharge ceases. Nitrate of silver in the proportion of two grains to six ounces of distilled water, sulphate of zinc in the proportion of two grains to the ounce, or the liquor plumbi subacetatis in the proportion of one drachm to the ounce of distilled water, are admirable injections. M. Fournier is opposed to the use of tannin, alum, or perchloride of iron. Chloride of zinc, in the proportion of one or two grains to the ounce, first used by the late Mr. Lloyd, of London, is perhaps the favourite injection in London practice at present, and often cures gonorrhœa in a very few days. Injections of bismuth are not to be recommended. Mr. W. F. Teevan has a syringe for deep injections, only holding ten minims. The stem is six inches long, and five minims will, he says, paint the whole urethra from one end to the other. Deep urethral injections may be also made by Dr. Dicks' catheter syringe.

Injections do not cause orchitis or rheumatism, as some assert; and they have no tendency to cause stricture; they are, on the contrary, the best means of preventing it. Cystitis or prostatitis, however, may be caused by over-strong injections. In some cases, where gonorrhœa becomes chronic, it requires all the care of the medical practitioner to master the disease. Sometimes it happens that the patient is careless; but when this is not the case, the daily passage of a bougie is often a very efficacious method of conquering the malady. The instrument is left for five minutes in the urethra; and the effect is either to excite inflammation, in which case injections become more efficacious, or to modify the sub-inflammatory condition of the

urethra advantageously. Such cases are often really cases of stricture, which can only be discovered by the use of the *bougie à boule*, or bougies of large calibre.

Gleet is called 'blennorrhœa' by the French. Urethral stricture is its most common cause. It is sometimes purulent in character, sometimes entirely free from pus; but is easily changed into a gonorrhœa. Hence husbands with gleet may at any moment have a purulent contagious discharge. Papillary hypertrophy may be seen in gleet in the navicular fossa or in the bulb, by inspecting with the endoscope.

Gleet, in the male, seems sometimes to resemble the uterine catarrh of women, and to be kept up by the weak state of health of the patient. In such cases, sea-bathing, hydropathy, etc., are the best methods of treatment. Injections, however, very frequently succeed in curing gleet; and the sulphate or chloride of zinc are the most useful. Ricord used red wine, mingled with twice as much water, for an injection in gleet, and tincture of iodine, six minims to six ounces of water; and bismuth is useful in that disease, but the passing of bougies should always be tried. In all cases of gleet, the urethra should be examined by a large bougie or sound, since the frequent passage of bougies is one of the best means of treatment. Twenty minims of the tincture of the perchloride of iron should be given thrice daily. The urethra may, in very obstinate cases, be cauterised, either by injections, or by means of the endoscope. Mr. Teevan says 'the *bougie à boule* tells us how to treat gleet. If there is induration, contraction, or even leatheriness, the case must be treated by gradual dilatation. If not, then injections will cure the case.' Nitrate of silver, in the proportion of three grains to an ounce, may be injected by means of a syringe, adapted to the end of a middle-sized catheter. Desormeaux and Cruise of Dublin introduced the endoscope, and touched the inflamed parts with a solution of equal parts of nitrate of silver and distilled water; but, somehow or other, this plan has been found too cumbrous to be carried out in practice in London or Paris. Hunter used electricity in gleet; but it is difficult to understand the *rationale* of this method. Some patients get well *in time*, who are refractory to all other influences.

Complications of Gonorrhœa.

There are several accidents which may happen to a patient suffering from gonorrhœa, such as enlargement of the

inguinal glands, and of the penile lymphatics, inflammation of the prepuce, prostatitis, and retention of urine, or abscess of the peri-urethral tissues. In addition to these, gonorrhœal rheumatism is met with; and, occasionally, gonorrhœal ophthalmia and rheumatic ophthalmia. As to the inflammation of the inguinal glands in gonorrhœa, it is usually very mild, unless aggravated by excessive exercise, in which case the cellular tissue may become infiltrated, and matted to the skin. There is, occasionally, suppuration of the glands, but this is easily treated by means of poultices, etc. Such buboes very rarely suppurate, and when they do, in the male, the pus is never inoculable. In scrofulous constitutions, the glands in the groin may continue enlarged and suppurating.

As to the penile lymphatics, they sometimes are inflamed, and, at other times, enlarge painlessly. The largest of the cords is on the dorsum of the penis. Such inflammations are easily subdued, and it is very rare that suppuration takes place. Sometimes the skin of the organ becomes of a rosy hue, and more or less considerably swollen, whilst the lymphatics are inflamed and enlarged. The penis sometimes becomes greatly enlarged, twisted, and so painful as to cause sleeplessness and feverishness; but a few simple remedies subdue this apparently serious condition in a few days. Sometimes, however, diffuse suppuration of the prepuce takes place, and it falls in gangrene, leaving the gland naked, and visible through the perforation. At other times, there is hard induration of the prepuce. The treatment required is warm baths, with fomentation of the parts, and injections of nitrate of silver between the prepuce and gland, when balanitis exists. Incisions should be made when diffuse suppuration exists. Balanitis comparatively rarely occurs as a consequence of gonorrhœa. The exciting causes of balanitis are, generally speaking, the same as those of urethral gonorrhœa; but, in addition to these, the presence of a syphilitic chancre or soft-sore, or the irritation of a syphilitic eruption, may cause it. It is best treated by injections, between the prepuce and gland, of a ten-grain solution of nitrate of silver in an ounce of water. Mr. H. Lee recommends lime-water as a lotion, or finely powdered calomel and calcined magnesia dusted on the parts. A pencil of nitrate of silver may be used, or lint may be soaked in glycerine of tannic acid, or in a lotion containing one drachm of the liquor plumbi subacetatis in an ounce of distilled water.

Phymosis results either from serous infiltration of the prepuce, or from inflammation. Paraphymosis takes place in cases where the prepuce is short. It is generally easily reduced by oiling the glans, and compressing it with the fingers of the right hand, whilst the left encircles the body of the penis. Sometimes, however, the constriction requires to be cut through at the bottom of the furrow, or a narrow bistoury inserted beneath it, cutting upward. When phymosis coexists with balanitis, a strong nitrate of silver lotion, of ten grains to the ounce, is to be injected between prepuce and gland. In persons liable to phymosis, it is useful to moisten the parts, when gonorrhœa occurs, with equal parts of brandy and water, with a little tannin added. Circumcision is sometimes required; and it must be borne in mind that Mr. Jonathan Hutchinson found, at the Metropolitan Free Hospital of London, in 1854, that nearly one half of the cases of gonorrhœa he saw were among Jews; whilst not more than one fifteenth of the cases of syphilis were seen among Jewish men, a curious experience, which he attributed to circumcision. Bumpstead says the operation of circumcision in no way lessens the irritability of the nerves of the gland, but rather has the contrary effect.

There is sometimes bleeding from the urethra in the acute stage of gonorrhœa; and, in very rare cases, it may be necessary to inject a solution of perchloride of iron into the urethra.

In cases of retention of urine, the patient must be placed at once in a hot bath (of 102 F.) and laudanum injections used, before using the catheter; and in such cases a *gum elastic* bougie, gently introduced, is least likely to do any harm. Brodie recommended half a drachm or a drachm of laudanum to be given as an enema in three ounces of starch, or a dose of opium by the mouth every hour, until urine flows. The catheter must often be left in. In rare cases, the bladder must be punctured per rectum, or opened behind the seat of stricture, and a sound introduced into it. Very rarely the cavernous bodies become inflamed in gonorrhœa; at other times there occur abscesses in the tissues surrounding the urethra, opposite the fossa navicularis or the bulb. These must generally be evacuated as soon as recognised, when situated in the region of the bulb, otherwise the patient is exposed to urinary fistula and infiltration of urine if they open into the urethra.

In some cases the glands of Cowper, which open into the

bulb, suppurate, and an incision should in such cases be made to evacuate the pus as soon as formed. The seminal vesicles are said to be inflamed occasionally, but the symptoms of this disease are, we suspect, very obscure. The prostate may be either congested or inflamed in gonorrhœa. Connection, masturbation, or nocturnal emissions may produce the former, or the use of alcoholic beverages, or injections, the latter. The symptoms of congestion of the prostate are weight and pain in the perinæum, painful and frequent micturition, tenesmus, and great anguish. The prostate is felt to be enlarged, by introducing the finger into the rectum, and it is also sensitive to the touch. When there is abscess of the prostate, there is a feeling of burning, with pain in the perinæum, dysuria, pain in going to stool, with rectal tenesmus, and a feeling as if a foreign body were in the rectum. On passing the finger into the rectum, the prostate is felt to be enlarged and very tender, and when a catheter is introduced it is suddenly arrested ; there is fever, anorexia, and insomnia. This state of things goes on increasing for six or seven days, and if the case is favourable, resolution takes place in less than three weeks. At other times, suppuration takes place, and if this is evacuated externally, all goes well ; but sometimes such abscess bursts into the urethra or rectum, leaving a cavity in the gland. Such cases are often very full of danger, and may wear out the patient. Prostatitis is apt to produce chronic hypertrophy in old men, and tuberculosis in the young. In very rare cases it may prove fatal from gangrene. Examination per rectum, conjoined with catheterism, should never be omitted. As to treatment, warm baths, rest, and local blood-letting are all very useful. Fifteen to thirty leeches to the perinæum are indicated, according to the gravity of the case. The use of warm water enemata should not be neglected in grave cases, and incisions, if suppuration of the gland be diagnosed. Mr. H. Lee approves of the application of a solution of two drachms of the perchloride of iron in eight ounces of distilled water to the diseased organ locally, by means of a perforated catheter.

Chronic prostatitis may be caused by gonorrhœa, or by excessive sexual intercourse or masturbation. In this affection a discharge is frequent, consisting of uric acid, mucus corpuscles and epithelium cells, with or without pus, and much resembling the discharges in involuntary seminal emissions. The microscope will readily clear up this point :

and treatment by twenty minims of the perchloride of iron thrice daily, or nux vomica and phosphoric acid combined, or ergot may prove of service.

Cystitis is very common in the acute stage of gonorrhœa, especially at the neck of the bladder, on account of the extension of inflammation to that part. It may occur in the decline of gonorrhœa. At first, the chief symptom is a frequent desire to micturate, with tenesmus, sometimes leading to incontinence of urine, pain with the last drops of urine, which are sometimes mingled with a certain quantity of pus, but rarely any rise of temperature. The urine deposits pus and mucus. This seldom lasts for more than a few days, and is easily enough treated by rest, low diet, and enemata, with twenty drops of laudanum. It is rare that the body of the bladder is affected in gonorrhœa. Infusion of buchu is invaluable in such cases, and decoction of senega or ergot.

Epididymitis is a very common consequence of gonorrhœa. Perhaps one in ten persons suffering from the disease, has 'swelled testicle.' This accident does not generally come on until the gonorrhœa has lasted several weeks, from the third to the sixth week; and it sometimes appears in chronic cases. The inflammation of the urethra is the main cause, but it is more likely to come on in patients who have committed some excess, either in masturbation, connection, drinking, or exercise. The testis is almost always spared in the inflammation of the epididymis; which, indeed, is generally the only part of the organ affected. Generally speaking, only one epididymis is affected at first, and either right or left seems to be affected with equal frequency. The first symptom of the affection is a dull pain in the scrotal region with dragging at the cord and in the loin; also, a pain about the groin, radiating towards the pelvic cavity. The testicle soon becomes painful and swollen, the scrotum injected and œdematous. The pain is often very distressing, and allows the patient no rest; it continues until the testis is swollen, and is then often appeased. The swelling is sometimes made very great by effusion of fluid into the tunica vaginalis, and in such a case, it is very difficult to distinguish the testis from the epididymis; at other times, it is easy enough to distinguish that the epididymis and cord alone are inflamed. The latter is the symptom most frequently observed in practice. Sometimes the inflamed cord is felt to be as large as the little finger, and the

peritoneum is also, in rare cases, affected by the inflammation, as well as the seminal vesicles. The inflammation of the tunica vaginalis follows that of the epididymis. When the scrotum is œdematous, it is difficult to make out the condition of the gland beneath. There is usually some fever present in epididymitis, and the inflammation gets to its height in some four or five days, and then tends gradually to subside; but relapses are not rare if the patient is careless and fatigues himself. Resolution takes place slowly, in a month or two; but sometimes indurations of the epididymis may last an indefinite time. Suppuration is very uncommon, and so with atrophy.

The observations of Gosselin of Paris have shown that in epididymitis there are plastic deposits made in the interior of the little canals, or the cellular tissue surrounding them, most marked at the tail of the epididymis; and, long after the inflammation has disappeared, indurations persist, which usually gradually disappear; but they may always remain, and thus cause sterility of one testis, or complete infecundity, if both are inflamed. In the latter case, of which the author has seen examples, the spermatic fluid is wanting in spermatozoa. M. Gosselin, who was assisted in his important researches by MM. Verneuil and Robin, published his paper on this subject in the *Archives Gén. de Méd.* of September, 1853. In nineteen cases of double epididymitis, no spermatozooids were found in the semen; but, in two of these cases, they reappeared after a time. His conclusions were, that the induration was usually in the globus minor, and as this is a single vessel, the passage of the semen was thus prevented. This causes no pain, nor apparent change in the function of the genital apparatus. If there be induration of both testes, sterility ensues; but this may occasionally disappear. In cases of absence of family, it is not always (although generally it is so), that the female organs are in fault. In cases where the male has had double orchitis, the semen should be examined. The way in which gonorrhœa produces epididymitis is not yet clearly made out.

In the immense majority of cases, epididymitis is not a grave affection; and it is only in the cases where, when double, it is followed by hard points in the tail, that it produces sterility. Generally speaking, all that the patient requires in the way of treatment is rest in bed, the testes being raised up to the abdomen as much as possible, by

means of a handkerchief supporting the scrotum, tied to a band round the waist, occasional brisk purges of Epsom salts, and linseed-meal poultices, or hot fomentations; or if he *will* walk about, a well-made suspensory bandage. All plaisters of mercury, iodine, etc., are worse than useless, according to the author's experience, except when used instead of suspensory bandages, as proposed by Mr. Morgan, of Dublin, in the *Medical Press and Circular*, of April, 1871. Tartar emetic, mercury, the application of ice or pressure, etc., are all needless; and therefore bad practice. True gonorrhœal orchitis is very rare indeed, although it does occur, and is a very grave affair, as it may end in gangrene of the testis. In some cases of chronic gonorrhœa, according to Dr. Alfred Fournier, the epididymis becomes enlarged, so as to simulate tubercle of the part. It is important that this should be borne in mind.

In 1781, Swediaur spoke of gonorrhœa causing rheumatism; and in 1786, Hunter confirmed this view; yet some sceptics will still have it, that the occurrence of articular rheumatism, along with urethral gonorrhœa, is merely fortuitous. The author has seen too many undoubted cases of articular rheumatism brought on by gonorrhœa, to have any doubt upon this point. Patients come to consult the medical man, who, each time they have clap, are tormented with articular rheumatism. Cold and damp have little to do with gonorrhœal rheumatism; and women, as is natural, are less apt to have that disease than men. The author, however, has observed several well-marked cases in women. One case, in which the wrist joint was quite disorganised, was evidently due to gonorrhœa. According to Ricord, it is only in cases where the *urethra* is inflamed in both sexes, that we meet with gonorrhœal rheumatism, and it is never seen in mere vaginitis or balanitis.

This consequence of gonorrhœa is rarely met with before the third week, and usually far later in the disease. This kind of rheumatism most frequently affects the articular synovial membranes, but it may also attack the muscles or the eye. M. Mauriac has written an interesting monograph on cases seen by him at the Hôpital du Midi at Paris. The knee joint is most frequently attacked, and the author has seen double arthritis of the knee in more than one case. The large articulations are most frequently attacked, although the smaller joints are so sometimes. More than one joint is usually affected. Sometimes there is effusion

into the articulation; at other times, simply pain; at others, acute inflammation supervenes. One point for diagnosis is, that gonorrhœal rheumatism only extends to a few of the joints, not to all, as in ordinary rheumatism. The heart is not attacked in this disease. In rare cases stiff joint may ensue, especially in the smaller joints. The best treatment probably is to blister and compress the diseased joint. Absolute rest of the part by means of splints is indicated. Iodide of potassium and vinum colchici are given internally, but the author has not seen much good effected by these remedies. A starch bandage is of use in the latter stages, to keep the parts motionless. The cure of the gonorrhœa does not involve that of the rheumatism. Sciatica is sometimes caused by gonorrhœa, and diplopia has been noticed.

There are two affections of the eye due to gonorrhœa; the one being caused by contagion of the pus from the urethra, the other connected with the rheumatic affection just described. The pus of gonorrhœa is sometimes put into the eye in cases of pannus, and Mr. G. Critchett, of London, has been very successful in the treatment of such cases by this means. Fortunately, this severe effect of gonorrhœa is rarely met with in practice; only two or three cases a year were observed by Ricord. In this disease there is a sudden invasion of very acute symptoms; lachrymation, abundant discharge of sero-purulent fluid from the conjunctiva, œdema of the eyelids, with spasm of the orbicularis, chemosis, periorbital pain amounting to anguish, effusion between the layers of the cornea, and a tendency to ulceration of the cornea. The eye may be lost in a few days by the violence of the inflammation. The prognosis is very bad in most cases of this disease. It must be treated with great decision. The conjunctiva is to be cauterised with the pencil of nitrate of silver repeatedly, and the eye-douche frequently applied. Atropia drop, four grains to the ounce, is to be frequently dropped into the eye. Incisions of the palpebral conjunctiva must be made. As to rheumatic affections of the eyeball, they are doubtless frequently caused by gonorrhœa, as pointed out by M. Ricord. Aquo-capsulitis is especially observed in such cases, and rheumatic iritis is not unfrequently met with; conjunctivitis is also seen. The prognosis of all these seems not unfavourable. As to the treatment of these ocular complications of gonorrhœa, there is not much to be said. Atropine may be used locally in the case of iritis.

Gonorrhœa is almost always acquired by sexual con-

nection. It has, in almost all cases, no relation in the male with syphilis or soft sores. Hernandez, in 1812, first of all attacked the identity of syphilis with gonorrhœa, but Ricord was the person who definitely settled the question for the male sex. Some authors consider gonorrhœa a virulent disease, like syphilis, farcy, etc.; but there seems to be reason to deny entirely the truth of this opinion. It is probable that gonorrhœal pus only acts by irritating the urethra, for vaginitis or uterine catarrh will produce it in the male. Gonorrhœa, then, is not a virus.

STRICTURE OF THE MALE URETHRA.

According to the measurements taken by Thompson ('On Stricture,' London, 1858) the average length of the male urethra is seven and a half inches during life, as judged by using graduated catheters. The length of the prostatic part is about $1\frac{1}{4}''$, and is bounded behind by the uvula vesicae. The veru montanum is $\frac{3}{4}''$ long, is erectile, and prevents the semen from entering the bladder in connection. The sinus pocularis is in front of this. The membranous part of the urethra is nearly all contained between the two layers of the deep perineal fascia, is 1" long, and narrower than any part except the meatus. The spongy portion is 5" long in relaxation, and about 7" in erection, and the bulb is the posterior inch of this part, and is very dilatable. When the parts are healthy, a No. 12 English catheter usually passes with ease. In most Continental countries, and in the United States, the French scale is much used for measuring bougies. In that scale No. 30 has a diameter of ten millimetres. Dr. Weir, of New York, in an able paper read in 1876 (New Y. Co. Med. Soc.) says that the spongy part of the urethra is the narrowest after the meatus, and that normal constrictions are met with there, which are not ascertainable by urethrometers, and that this portion can be safely dilated up to 32 millimetres. A sound of No. 40 F. can sometimes be passed into the bladder, and the diameter of the urethra seems to vary directly with that of the circumference of the penis. The urethrometers of Dr. W. Richardson (Dub. M. Jour., 1873) or of Dr. Weir are useful for making such explorations. There is a permanent or subpubic curve in the urethra; this is said to form an arc of a

a circle three and a quarter inches in diameter. Jarjavary says (Rech. Anat. s. l'Ureth., 1856): 'The urethra is narrow at the orifice, dilated in the gland, and very slightly narrowed at the termination of the fossa navicularis; then comes a nearly uniform cylinder to the prepubian angle, where a narrowing is often found. It enlarges then to the bulb.' Teevan found a diameter of 18¾ millimetres in the prostatic part, and Dolbeau 20 millimetres. The normal size of the meatus is from 21 to 28 millimetres in circumference. Kölliker has discovered that there are muscular fibres around the whole urethral canal, which accounts for the existence, in many cases, of what is called spasmodic stricture, which may take place in any part of the canal. The presence of stone in the bladder, long retention of urine, or excessive sexual exercise may all cause spasm of longer or shorter duration. Sometimes a patient, who during life has been said to have severe stricture, is found after death entirely free from this disease. Congestion may accompany spasmodic stricture and complicate it.

Dr. Otis, of New York (N. York Hos. Gaz., April 19, 1879) has kindly forwarded a pamphlet to the author on *Chronic Spasmodic Stricture*, in which he insists, with reason, on the occurrence of spasmodic stricture in the membranous portion of the urethra simulating organic stricture, and caused by irritation reflected from the anterior portion of the urethra. He reminds us that the membranous part of the canal is surrounded by a stratum of plain muscle, about one millimetre in thickness, the fibres being generally circular, and outside of this there is a considerable amount of striated muscle, forming the compressor urethræ, and capable of forcible contraction. Verneuil (Soc. Anat., 1866), mentioned that many supposed deep strictures were merely spasmodic contractions of these muscles: and Otis says that the slightest obstruction in the urethra is apt to produce the severest strictures of this kind. Such spasmodic strictures are often treated, he says, by internal and external incision, and spasmodic stricture is not by any means very readily distinguishable from organic. Hence, in practice, all obstructions in the anterior part of the urethra are to be treated first of all, and not till then can it be said that deep organic stricture exists. See also Henry Smith ('*Stricture*,' London, 1857).

When the meatus is narrower than the normal standard, it has been known to originate spasmodic stricture and also

cystitis. Mr. F. Jordan (*Lancet*, January, 1876), gives several cases of congenital narrowing of the meatus, namely, a line or two in diameter, and thinks that any of the sequelæ of ordinary stricture may ensue from such a condition.

Thompson's dissections prove that, at first, an organic stricture consists often of mere thickening of the mucous membrane, hardly noticeable after death. At other times, the membrane loses its transparency, and becomes adherent to the subjacent tissues, whilst transverse fibres surround it like purse-strings. In the most severe forms, the submucous tissue is filled with lymph, which may give the spongy body a hard, nodulated feeling. Of 270 preparations, Thompson found 216 strictures in the subpubic curvature, 51 in the middle spongy region, and 54 in the anterior spongy portion. M. Mercier, of Paris (Bul. de la Soc. Anatom., Paris, 1858), says, that strictures are most common at the bulb. Strictures are, indeed, rare in the prostatic region of the urethra. In 267 preparations examined by Thompson, stricture was single in 226 : but as many as eight have been noticed in one urethra.

The late J. D. Hill of London, in an 'Analysis of 140 cases of Urethral Stricture,' (Churchill, 1871), divides them into single, multiple, complicated, and cartilaginous, or undilatable. Nearly one half are cases of simple stricture. Of 69 cases of single stricture mentioned by him, in 40 the stricture was near the bulb, in 5 in the membranous portion, and in 10 in the spongy portion. In multiple strictures, the first constriction is usually about two inches from the meatus ; the second, about half way between this and the bulb ; and the third, about the bulbo-membranous junction. The character of the first and second of these is usually nodular ; the third usually fusiform, varying from one-third to three quarters of an inch in length, and in size from a pea to a marble. Such strictures have sometimes a history of twenty or thirty years' duration. A stricture may consist of a few fibres surrounding the canal like a thread, or it may be like a band. The former are called *linear*, bridle, or valvular. The seat of the fibro-plastic deposit after gleet is in the substance of the lining membrane of the urethra, or in the subjacent cellular tissue. In the severest form, the meshes of this submucous tissue are filled with organised lymph, and the normal elasticity of the canal is lost. Ricord met with many cases where indu-

rated chancre had caused stricture. No case of stricture has been seen in the prostatic part of the urethra, and they are certainly almost exclusively limited to the bulb and spongy urethra. Mr. Teevan says that 'eighty per cent. of strictures are in the sub-pubic region, and they are usually *tunnel* strictures.' Stricture may involve the canal to the extent of half-an-inch or several inches, and the urethra in these cases become irregular or tortuous. Some strictures, when dilated, rapidly contract again; these are called *resilient.*

Mr. Syme once used the expression that, if the urine passes out, instruments may always, with care and perseverance, be got in beyond the contraction. This is different from the case where a distended bladder requires immediate relief. He never contended in such cases that the introduction of a catheter was always practicable. Cases have been mentioned in which it required 'six sessions of three hours each,' before an instrument could be passed into the urethra. Gross of Philadelphia writes in 1855, 'I assert, upon the testimony of personal experience, the best test of all, that there is a class of strictures, the result of ordinary causes, which, while they admit the passage of urine, slowly and imperfectly it may be, do not permit the introduction of any instrument, however small, into the bladder.' Dr. Cazenave of Bordeaux (Jour. de Med. et de Chir. May, 1871), says that, during twenty years' experience, he has never failed to cure retention of urine by introducing a piece of ice, about the size of a chesnut, into the rectum. This is renewed, if necessary, in two hours, and is infallible, according to that gentleman.

The urethra generally becomes dilated behind the seat of the stricture; the mucous membrane, too, becomes inflamed, which often causes a gleety discharge from the urethra. Abscesses and fistulæ are not rare in such cases, opening, in some instances, into the urethra. Numerous post-mortem examinations have shown that there may be no connection between an abscess dependent on stricture and the urethral canal. Such fistulæ may open in the abdomen, the rectum, perinæum, or scrotum; or on the thighs, or nates. In cases where the urethra is impervious, the urine may escape entirely through these passages. The walls of the bladder become greatly hypertrophied in cases of urethral stricture, and the viscus is sometimes pouched or sacculated. The

urine is apt to be decomposed; and hence the bladder becomes inflamed, thickened, soft, pulpy, and much diminished in size. The ureters and pelves of the kidneys are often much dilated, whilst the medullary portion may become atrophied. The ejaculatory ducts may be enlarged, and the seminal vesicles are sometimes found to be filled with purulent matter. There seems to be no connection between urethral stricture, and enlargement of the prostate. Rigors, inappetence, chilliness, pain in the perinæum, and hypochondriasis, are frequent concomitants of stricture of the urethra.

A gleety discharge from the urethra, combined with frequent desire to pass water, is an early symptom of stricture. The stream is diminished in fulness and projected feebly, whilst it is at times spiral, forked, or flattened. There is often aching pain in the loins and perinæum, or behind the pubes. In bad cases, the urine constantly dribbles away, and the patient is often supposed to have incontinence of urine. Nocturnal emissions frequently occur from the irritation of the parts. In many cases there is impotence, and the patient may come to the medical man complaining chiefly of this symptom. The semen comes away too late, and this produces sterility in some cases. Retention of urine is frequent, after exposure to wet and cold, or after spirit drinking. Few sufferings can equal that of retention in cases of stricture of the urethra. Most generally it is the urethra which gives way behind the stricture. When such rupture takes place, which it does anteriorly to the triangular ligament, the effusion extends upward and forward into the scrotum and abdomen; when, unless free incisions be at once made, the parts fall in gangrene.

Stricture, in by far the greater majority of cases, is caused by chronic gonorrhœa. Organic stricture of the œsophagus and rectum are rarely or never produced by acute, but almost invariably by chronic inflammation. Injury to the perinæum causes a small per-centage of the cases. In gonorrhœal stricture, it is found that long continuance of urethritis is the most important factor; hence the importance of getting rid of gonorrhœa as quickly as is compatible with safety. Doubtless, the use of very strong injections, such as fifteen grains of nitrate of silver to the ounce of distilled water, often used to cause stricture, in the practice of Lallemand, and his followers, who used such injections in

cases of frequent seminal emissions; but there is not the least reason to believe that mild injections ever do so: and, as they are the most rapid means of curing gonorrhœa, they are consequently the best means of preventing the occurrence of lesions which usually arise from chronic gonorrhœa. Thompson says ('On Stricture,' London, 1858): 'I have no hesitation in asserting that the proper use of injections is one of the best methods of combating urethral inflammation, especially in the chronic form, and thus of preventing the occurrence of stricture.' Venereal ulcers seated on any part of the urethral mucous membrane may lay the foundation of stricture. This is seen at the orifice in phagedaenic chancres, and may occur within the canal at a greater or less distance from the meatus, when it may be mistaken for gonorrhœa. Sub-acute inflammation of the prostate and urethral hyperæsthesia are sometimes mistaken for stricture.

With regard to the instruments for exploring the urethra, it must be confessed that the English standard is a faulty one, as its No. 1 is too large, and the subsequent numbers advance too rapidly up to No. 12. There are four sizes smaller than the English No. 1, contained in the French standard, called *Charrière-filière*; and No. 12 on the English scale corresponds with No. 21 of the French. There is no such thing as a constant 'English scale.' The smallest number on the English scale is five millimètres in circumference, which is much too large for tight strictures. The French is greatly better than the English scale. Its numbers represent the millimètres of circumference of each instrument, these succeeding each other by one millimètre. In cases where a very small catheter is required for a tight stricture, it is better to use bougies or bulbous sounds, as there is then but little danger of making false passages. The English mahogany-coloured bougies are rather too stiff, and not to be compared to the French black olivary bougies, so highly recommended by Thompson, Teevan, and others. An ingenious substitute for a catheter in emergencies has been proposed by a New York physician. It consists of a piece of ordinary bell-wire, doubled on itself and bent to a proper curve. Bougies of elastic gum become rough with use, and irritate the canal. All bougies should be carefully examined from time to time. Mr. W. F. Teevan (Med. Soc. of Lond., March 6, 1871) says, 'The treatment of stricture may be summed up shortly thus:

(1) gradual dilatation whenever practicable, by olivary bougies; (2) incision, whenever desirable; (3) external urethrotomy, whenever necessary.' Filiform bougies are absolutely necessary for the treatment of stricture; and if always used, we should hear of fewer impassable strictures.

The French *bougies à boule*, so much praised by Teevan, will, he alleges, detect very slight urethral contractions (so will metallic instruments in the hands of a skilled man), and are also useful in diagnosing how far down the canal the stricture exists. They are made of gum-elastic, and have a ball at the end shaped like an acorn. Dr. Weir (*loc. cit.*) says that none of the methods hitherto used suffice to enable us to distinguish between normal and abnormal narrowing of the urethra, certainly from No. 39 of the French scale upwards. And Dr. B. Richardson (Dub. M. J., 1873), thinks the *bougie à boule* deceptive as an urethral explorer. Thompson also speaks with mistrust of it (*Lancet*, Dec. 1875). The recumbent posture is the best for the passing of catheters. The patient lies on his back with his shoulders raised, the knees drawn up, and the practitioner on his left hand. When the instrument has been slowly passed down to beneath the pubes, the shaft is brought round to the median line, and the handle elevated to the perpendicular and depressed between the thighs; if difficulty occur the left finger may be pressed behind the scrotum or passed into the rectum.

In treating stricture of the urethra, alcoholic liquids and tobacco should be avoided, and the patient should be careful in his diet. Flexible instruments, some say, are the instruments *par excellence* for the successful treatment of stricture by dilatation, unless the stricture is not very narrow, in which case metallic bougies certainly slip in very easily. Persons not thoroughly conversant with stricture, it is alleged, will do much less harm, if they confine themselves entirely to olivary bougies; but Hill says that soft bougies often cause false passages. A bougie should not remain long in the stricture, according to Thompson; and from two to four days should elapse before passing successive bougies. He advises, in difficult cases, the previous injection of the urethra with olive oil. The dilatation should be continued until No. 26 or 28 of the French scale can be passed, and the patient should then be told to pass an instrument for himself once a week for a time, and then once a month for years. Those who re-

cognise the rarity of a cure of stricture from their own experience are led to stop dilatation, when the natural calibre of the urethra has been attained to. But those who believe in a radical cure, or think they can keep the disease away for lengthened periods, carry their dilatations or incisions up to thirty-two millimètres, and are forced to incise the meatus. They do this also in cases of gleet, to assist the mucous membrane to regain its normal state by pressure.

Internal incision and rupture of stricture were, some years ago, much in vogue in London and New York, and this in the face of the fact, that several deaths had occurred from the use of Mr. Holt's instrument for forcible and immediate dilatation, and also from internal urethrotomy. Maisonneuve's instrument is perhaps the best for internal urethrotomy. It consists of a grooved staff, with a screw point at its extremity, to which a filiform bougie can be attached. This latter is first introduced, and the grooved staff follows it into the bladder. The blade is then thrust down the staff, dividing any obstruction it meets. It seems, however, sometimes to incise the urethra, in addition to performing its legitimate task, and should not be used for strictures far back in the urethra. Civiale's instrument first passes through the stricture, and cuts from behind forwards. Strictures near the meatus should be incised; and even in the sub-pubic portion this is true. After the operation the urine is drawn off, and a suppository of one quarter of a grain of morphia is given, the patient being told not to micturate for some time. A catheter may be passed in three days time, and a sound regularly passed. The operation is by no means devoid of danger to life.

Mr. Barnard Holt, in his work 'On the Immediate Treatment of Stricture of the Urethra by the Employment of the Stricture Dilator' (London, 1863), mentions that he had then treated two hundred and fifty cases by this process without any bad results, and affirms that he believes all practitioners must adopt his practice ere long. 'Ordinary treatment of stricture,' says Holt, 'is tedious, occupying several months.' In 1856 he commenced using his dilator, which 'consists of two fixed blades, fixed in a divided handle, and containing between them a hollow wire welded to their points, and, on this wire a tube, which when introduced between the blades corresponds to the natural calibre of the urethra.' An instrument, almost

identical with this, was advocated in Paris some years ago by Dr. Perrève, but seems not to have gained a footing in that city. 'The patient,' says Holt, 'should be directed not to make water for two or three hours before the instrument is introduced. This is,' he continues, 'a most simple operation, not attended with any serious mischief, giving immediate relief, and not confining the patient to bed for more than twelve to twenty four hours, whilst the urethra is at once made of its normal calibre. It is available in all permeable strictures, and may be repeated, and is superior to cutting operations.' Such are the expressions of the well-known surgeon of Westminster Hospital in his work. Teevan observes that Perrève's instrument was condemned in Paris, and that W. Fergusson, H. Smith, and other able London surgeons, have abandoned its use, as it occasionally causes death from rupture of the urethra. He, therefore, uses olivary bougies in all cases in which Holt's dilator is used by its admirers. Hill agreed that rupture of the urethra is a serious matter; but alleged that a skilful operator with Holt's instrument would not rupture the urethra, but only the stricture. We prefer dilatation with bougies.

We have now to speak a word as to the use of caustics and external urethrotomy. As to caustics, which were recommended by John Hunter and some surgeons even in this century, they seem never to be indicated, as they are dangerous and uncertain. Perineal section on a guide has been called 'Syme's operation' (Syme—*Stricture of the Urethra*, 1849). This operation is useful in traumatic and impassable strictures; but internal urethrotomy should be preferred whenever possible. In his famous work, Syme states that he has never required to incise further back than the bulbous portion of the urethra.

In certain persons, the simple exploration of the urethra by a bougie may provoke attacks of intermittent fever. These attacks are usually quotidian. Generally they are slight; but, occasionally, they may cause danger to life in a short time, just as in some cases of marsh-poisoning. The practitioner must bear such facts in mind, and take great care to use as little violence as possible when exploring the urethra. The treatment of such paroxysms consists in the administration of doses of sulphate of quinine, in proportion to the violence of the attack; and the use of an antiphlogistic diet and regimen suitable to the case.

CHAPTER II.

GONORRHŒA IN THE FEMALE.

MUCH obscurity exists as to the diagnosis and prognosis of gonorrhœa in the female sex. The multiplicity of causes which may produce mucous or muco-purulent discharges in the female, render the whole subject of gonorrhœa in that sex much more abstruse than when it occurs in the male. Gonorrhœa of the vagina is more common than that of the urethra or vulva, and gonorrhœa of the uterus is least common of all. Some say that contagion constitutes the essential test of gonorrhœal discharge from the vulva, vagina, or urethra; and few will be found to doubt this. It is pretty clear that we must call a discharge of such a kind gonorrhœa, when it will produce discharge in the male, or purulent ophthalmia in the patient herself; but, having admitted this, we have not advanced very far. It will be asked: Has the woman, who thus gives a gonorrhœa, necessarily been herself the subject of contagion from another person; or can she not give contagion, solely by the fact of her suffering from leucorrhœa, which may have arisen spontaneously, or from non-venereal causes? Some able medical men are quite undecided what answer to give to this categorical question. In a conversation with Mr. H. Lee, and also with Dr. Routh in 1871, the author found both of those authorities in favour of the idea that gonorrhœa may be taken from any woman, however virtuous or free from symptoms she may be. Many, however (according to Dr. C. Mauriac, of Paris, in an admirable note on this subject, in his translation of Dr. West's lectures), who have had great experience, affirm that any woman, whose genital secretions communicate clap, has necessarily herself received gonorrhœa from an infecting source, and absolutely deny that specific gonorrhœa can arise spontaneously. It is quite true that, in the great

majority of cases, this view of matters is well founded. Almost all male patients in London who have come to the author with gonorrhœa have obtained it from women who take but little precautions to avoid contagion. Still, as remarked before, there seems to the author to be no permissible doubt at present but that Mr. H. Lee, M. Ricord, M. Fournier, and others, are quite right when they assert that certain genital discharges from the female, where there is no reason to suspect gonorrhœa, do take on occasionally the principle which causes women to communicate that disease to the male. Dr. Routh asserted categorically at a recent examination before the House of Lords' Committee on the Contagious Diseases Acts, that any man might contract gonorrhœa from his wife, however chaste she might be. (See Blue Book, 1871.)

With regard, too, to diagnosis, when gonorrhœal inflammation has attacked the vulva, urethra, and vagina acutely, and when the parts are bathed with thick greenish pus, there is but little difficulty in saying at once that gonorrhœa is present in the female, especially if we know the history of the case well. But when the inflammation subsides, and the discharge begins to be less purulent, and more or less of mucus only is poured forth, resembling ordinary leucorrhœa, we are often in very great difficulties. Many maintain that the persistence of urethritis is one of the best symptoms on which to base the assertion that gonorrhœa exists in a given case before us. Gonorrhœa of the urethra usually co-exists with vulvitis, vaginitis, and with perhaps inflammation of the os and cervix uteri; but it is said that it sometimes exists alone. The author had, in a case before the London Divorce Court, to base his diagnosis of the presence of the disease, to a great extent, on the presence of this latter fact. Urethritis, however, is sometimes caused by small growths in the urethra of the female; so that even this symptom is far from being completely pathognomonic. This has been pointed out to the author by Dr. Routh, in a conversation on this question. Trousseau, of Paris, also noticed that there were other varieties of simple urethritis. When this symptom is wanting, we have only the patient's own observations of her symptoms to guide us; and they, of course, are very unreliable. So that the author scarcely knows whether anyone would be justified in doing more than alleging, that he *believed* he had seen gonorrhœa in such a case.

It would, too, be doubtless very important in practice, to be able to tell when a discharge from the vulva, urethra, or vagina, which was once contagious, had become innocent; but—and this is one of the weak points of all so-called medical sanitary inspections — there exists no positive symptom to guide us; even in syphilitic gonorrhœa, this is notably true. Of course, when the discharge is greenish or yellow, it is more likely to be contagious; but, even when there is nothing more than leucorrhœa, the discharge may be most highly so; and it becomes more so at the menstrual period, or when sexual or alcoholic excitement is superadded. Pus, of course, is found in numerous vaginal discharges which are non-virulent. Thus we must fain say that there is great incertitude in the most important questions relating to gonorrhœa in the female. It is true, doubtless, that a very large per-centage of all cases of gonorrhœa in males are derived from women who have once had true gonorrhœa. More than this the modesty of science forbids us to assert. Of course, inoculations of the suspected pus on the urethra of another person would tend to clear up the question partially; but such experiments are quite inadmissible.

M. Guerin, of Paris, in his excellent work on the diseases of the external organs of generation in the female, asserts that he has noticed urethritis in almost all of his female patients who suffered from vaginal gonorrhœa; and, as before said, most persons agree that urethritis is the most certain symptom of gonorrhœa in the female. Urethritis, indeed, is a most rare affection in females who have not been in the way of contagion; even in little girls, who so often suffer from vulvitis. One reason why the existence of urethritis is often overlooked in the female is, that women suffer much less from this affection than men do; so that it is often necessary to press upon the urethra from the neck of the bladder forwards, in order to make a drop of pus appear, which otherwise would have remained unseen. When the urethra is inflamed, the introduction of a sound produces pain, and micturition is painful in most cases.

M. A. Guerin has described a form of urethritis as *external urethritis.* 'This variety has,' he says, 'its seat in two little glands, which open close, but external, to the female urethra.' Inflammation sometimes survives in these long after it has died out in the vagina and vulva; and when the registered women of Paris are anxious to avoid being

recognised as spreading contagion, they are easily able to wipe away any pus that may be pouring from these glands just before being examined. Urethritis in women may occasionally, although rarely, be caused by hard sores in the urethra. The hardness of the inguinal glands might clear up this point in suspicious cases. Dr. Alfred Fournier, of Paris, in an excellent memoir on rheumatism in women, accompanying urethritis, mentions that, in a short time, he noticed seven cases of gonorrhœal rheumatism in women, as well marked and clearly made out as in men. All of these women suffered from urethritis. He concludes that gonorrhœal rheumatism is less rare among women than people suppose, and that it is connected with gonorrhœal urethritis, and not with vulvitis or vaginitis. (Ann. Derm. et de Syph., 1869). In 1861, Trousseau published in the 'Bulletin de Therapeutique' an article, calling attention to the existence of simple urethritis in women; an affection characterised, he alleged, by a frequent desire to micturate, accompanied by a slight scalding; and commoner among married women than single ones. According to that author, at the moment when micturition commences, there is sometimes seen, first of all, a little glairy fluid at the orifice of the urethra.

In gonorrhœal urethritis in the female sex, cubebs and copaiba are of as great utility as in the male, when the inflammatory period is over; but, in women, abortive treatment may be more energetically carried out by means of cauterisation of the urethra, by the pencil of nitrate of silver, introduced after emptying the canal of its mucus and pus, by pressing from behind forward on the urethra. This practice does not cause any retention of urine, and is exempt from all evil consequences. Many persons, at the same time, give cubebs, matico, or copaiba, to conquer the urethritis. It must, however, be remembered that, if vulvitis and vaginitis exist at the same time with urethritis, they must be treated simultaneously with it, or contagion from other parts will keep the inflammation alive. Injections into the female urethra are not so generally useful as in the male sex, unless the patient is well educated enough to know how to use them, since we can hardly expect them to be made by ordinary women; otherwise, doubtless, they would prove excellent practice.

Gonorrhœal vulvitis, which is rarer than vaginitis, may attack the whole of the vulva, or only a part of the labia majora or minora, and may be superficial or follicular. The

follicles of the vulva pour out a thick purulent secretion in some cases. Abscesses in the neighbourhood of the vulva are common, and also in the vulvo-vaginal glands. The fluid which is secreted becomes rapidly purulent and yellow, or of a greenish hue; it is gifted with such acridity as to cause redness and excoriation of the parts around it; there is often great fœtor in uncleanly women. This is the most painful species of gonorrhœa in the female. In cases where there is much œdema present, with erosions which bleed easily, similar to those in balanitis, it is sometimes by no means easy to say whether chancres do not exist, which may be the primary lesions of syphilis. The glands of the groin should be examined carefully in such doubtful cases. Sometimes the ulceration of some of the follicles in gonorrhœal vulvitis may lead us to suspect that soft chancres are present; inoculation, in such a case, would clear up our difficulties.

When gonorrhœal vulvitis is very acute, an energetic antiphlogistic treatment is often required. Linseed-meal poultices, fomentations, and baths, are all useful, and some persons recommend puncturing the labia minora with a small lancet in cases of œdema from gonorrhœal inflammation. The inflamed surfaces also may be brushed over with a solution of nitrate of silver, ten grains to the ounce, and then kept apart by pieces of lint dipped in solution of alum, two drachms to the pint of water. The parts should subsequently be frequently bathed with a lotion of sulphate of zinc, two grains to the ounce, whilst the patient must abstain from all alcoholic fluids. When the follicles of the vulva are inflamed, the pencil of nitrate of silver should be inserted into them, and this will often rapidly effect a cure. In acute cases, an excellent lotion to the vulva is one part of liquor plumbi subacetatis to six of decoction of poppies. Dr. Bumpstead insists that a pint of injection should be thrown up at a time, the patient lying on her back, with a bed-pan beneath the hips. The patient may, at hospitals, be supplied with the solid ingredients, one or two drachms of sulphate of zinc or of alum, to be mixed with a pint of water, and this to be diluted if the parts smart. A teaspoonful contains two drachms of alum, two drachms of sulphate of zinc, one and a half drachms of acetate of zinc, three drachms of subacetate of lead, and half a drachm of tannin. From one to two drachms of these may be used in one pint of water. M. Sims likes injections to be warm.

Two drachms of alum, with one of tannin, in a pint of water, is a good injection in vaginitis and uterine catarrh.

Gonorrhœal vaginitis, the most common form of gonorrhœa, is sometimes co-extensive with the whole of the canal of the vagina; at other times, it only affects portions of the canal. It generally commences at the orifice, and travels backward. The lower part of the vagina is more or less affected in most cases of vulvitis, and it is said that the anterior wall is most frequently affected in gonorrhœal vaginitis. It is occasionally observed that, when the inflammation is close to the vulva, the inguinal glands become inflamed, and may even suppurate. Of course, in this case, the secretion will not prove inoculable. When in the upper part of the vagina, the glands are not likely to be affected. The speculum should not be used in the acute stage of vaginitis, as its use is often very painful, and excites inflammation. When the vaginitis is acute, a part or the whole of the canal is red, hot, and dry, or bathed with creamy pus. Sometimes patches are seen, resembling the surface of the skin after the application of a blister. Granular vaginitis is also met with, when the papillæ are very marked. There is pain in micturition. This acute stage rarely lasts for more than ten days, and then the gonorrhœa becomes chronic.

In chronic vaginitis, the local affection is usually confined to the upper part of the canal, and is accompanied in many cases by uterine catarrh; this condition of affairs is often kept up indefinitely if the treatment be not judicious. This fact is often never suspected until a woman, who was considered to be quite well, gives a gonorrhœa to a man. The speculum will then show, perhaps, thickening of the mucous membrane of the vagina in the posterior cul-de-sac, with dark red colouration, denudation of the epithelium, which covers the surfaces of the os uteri and its neighbourhood, with uterine catarrh from the inflamed cervix. Very frequently, too, ulcerations are observed occupying the margin of the os tincæ. These are merely superficial epithelial erosions of the cervix. In short, these appearances resemble those seen in certain uterine catarrhs of simple or non-gonorrhœal origin. But, then, it may be asked, would not a woman with such appearances be likely to give gonorrhœa to her husband? The reply is by no means very satisfactory. As to what is styled granular vaginitis, it is sometimes caused by gonorrhœal contamination, but also

frequently arises from other causes, such as pregnancy, or uterine catarrh. In gonorrhœal cases, the colour of such granulations is vivid red. Dr. Tyler Smith, in his admirable monograph on 'Leucorrhœa,' has shown how often obstinate uterine catarrh is caused by gonorrhœal inflammation; and this uterine catarrh, in its turn, often keeps up the inflammation of the neighbouring parts by the fluid poured out upon them from the congested cervix. Gonorrhœa of the uterus is usually confined to the cavity of the cervix. Sometimes it is secondary to vaginitis, and sometimes primary, in which latter case it is said that the lips of the os tincæ are red and swollen. This explains how gonorrhœa may be contracted from an apparently healthy woman.

At the commencement of vaginitis, we may use baths, slight purges, and repose, etc.; but whenever the most acute symptoms are over, energetic therapeutics should be proceeded with. As an injection, nothing is better than two drachms of alum with one of tannin in a pint of water, thrown up, while the patient is in the supine position, with a syringe pushed up into the posterior cul-de-sac. A solution of the chloride of zinc, of the strength of two or three grains to the ounce of water, is as favourite an injection of some in vaginitis, as it is in gonorrhœa in the male. A plug of cotton-wool, dusted over with powdered sugar and alum, may be left in the vagina for twelve hours, or one saturated in the tannate of glycerine (one drachm of tannin to the ounce of glycerine) of the British Pharmacopœia. The whole of the vagina, also, may be brushed over with a solution of nitrate of silver, one drachm to the ounce, or the solid stick used over the whole surface, or the tincture of iodine may be painted over it.

Gonorrhœa often relapses in women, because some slight point of inflammation remains active; so that the practitioner must take care to attack every part. It must be remembered that purulent ophthalmia is as dangerous in the female as in the male, and female patients should be warned of the dangers likely to result from carrying their fingers to their eyes. The inflammation of the vagina is carried onward, in many cases, to the cervix uteri and body of the uterus, just as, in the male, the prostate gland is attacked in some cases. When gonorrhœa is uterine, or from the lining membrane of the body of the uterus, there is often great pain felt; as in the case of a lady recently under the care of the author, who contracted it from her husband, also

a patient of the author's at the same time. It also attacks the ovaries, as has been well pointed out by MM. Bernutz and Goupil, and others, in a manner analogous to that in which the testis is attacked. Pelvic peritonitis is in many cases caused by gonorrhœa, and sterility in prostitutes is, doubtless, very frequently indeed due to the disorganisation of those delicate organs, the ovaries, and their peritoneal surroundings, by inflammation. Dr. Wilks, of Guy's Hospital, London, indeed, in a private note to the author, once expressed an opinion as to gonorrhœa being the chief cause of the notorious infertility of prostitutes; and not, as surmised by Acton and others, the excesses to which they abandon themselves. Pelvic cellulitis is also seen in cases of gonorrhœa.

A distinguished writer, Dr. Bumpstead, of New York, states that the causes of gonorrhœa in women, independently of contagion, may be enumerated as follows:—'Immoderate sexual intercourse, violence, masturbation, the presence of vegetations, syphilitic or other eruptions, errors of diet, ascarides in the rectum, and the external influences of cold, moisture, etc.' Vaginitis may be caused by scarlatina. A most important point in state medicine is the question of vaginitis in young female children. This is almost always a merely constitutional affection, and occurs in delicate children from some irritating cause or other, such as teething, ascarides, or the like. It is said by Bumpstead, 'that the pus in such cases is contagious, if applied to the conjunctiva of the eye.'

In gonorrhœa of the uterus, it is occasionally useful to dilate the os uteri by means of sea-tangle tents; after which the cavity of the cervix should be well touched with tincture of iodine, strong solution of nitrate of silver, or the solid stick; or, better still, with a film of nitrate of silver on the end of a uterine sound. This should be done at least twice a week, as the disease is often severe and obstinate. At the same time, some writers recommend the administration of cubebs or matico internally; but the author cannot say that this has proved of any utility in his practice. Leeches may be applied once or twice a week to the cervix uteri when it is much congested, and treatment in cases of gonorrhœal cervicitis must be very active and long continued in order to prove successful. Intra-uterine injections do not appear to be dangerous when the cervix is well dilated; but a cure can, the author thinks, be almost always effected without their aid.

It would be hardly fair to leave the subject of Gonorrhœa in the Female without adverting to the views recently put forward by the late Mr. John Morgan, of Dublin. In a pamphlet called 'A new View of the Origin and Propagation of Venereal Disease, 1870,' Mr. Morgan says, 'It appears that the product of the vaginal discharge of a patient suffering from syphilitic infection, is a chancroid or soft sore, when the discharge is introduced under the skin or applied to an abraded surface.' We shall return to this subject in a subsequent chapter on the doctrine of the chancre.

CHAPTER III.

SYPHILIS.

MODERN doctrines concerning the nature, and even the origin, of syphilis are continually changing. No sooner do we think that we have realised, in our mind's eye, some clear picture of the series of phenomena of this disease, than some new observer proclaims how that he has witnessed another series of facts to enrich the literature of the subject withal, which, on investigation, prove to be revolutionary and unlooked-for in their results. Such being the case, it cannot be deemed wrong in any one, if he desire, to go through a few of the moot points, and attempt to arrive at some conclusions, permanent or temporary. Both physicians and surgeons may now-a-days take a share in the debate concerning syphilis; for neither the one nor the other of these rather arbitrary divisions of the domain of medicine can be said to be likely to see the whole of the drama of syphilis played out, without caring to hear what the experience of the other is. In Paris, of late, this has been found so true, that physicians, instead of surgeons, now hold the majority of the posts in the venereal hospitals. Operative surgery of a formidable character is so seldom called for in cases of syphilis and gonorrhœa, that it has been found more rational to require a little surgical skill from the physicians of the hospitals of the Midi and Lourcine, than to employ an operative surgeon for patients in whose treatment, in the great majority of cases, drugs and hygiene are alone necessary. In all probability, opinion in this country will soon follow this example, especially as medical men are aware that, of late, some of the best monographs on syphilis have been written by gentlemen who, like Wilks, Jenner, Hughlings Jackson, Broadbent, Buzzard, Green, Moxon, Gull, Greenfield, Barlow, Gowers, Goodhart and others, do

not occupy themselves with operative surgery, but are simply physicians.

Origin of Syphilis.

Somehow or other, it is difficult to rest satisfied that a clear idea of the causation of any virulent disease has been obtained until we are able to assert fearlessly that it has had its origin at some distinct recent, or far off, epoch, and is not liable, like typhus, to appear at any time, through influences which are continually at work where want exists with its hideous concomitants, over-crowding, female degradation, and abandonment of cleanliness and care of the common decencies of life. With all that has been written (and there has been no lack of research on this point) many authors cannot confidently make up their minds as to whether syphilis existed among the ancient Greeks and Romans, or whether it was a new poison introduced into Europe at the end of the fifteenth century. From the medical works of Dr. Francisco Lopez de Villalobos, so well and classically translated recently by Mr. Gaskoin, we find that this Spanish court physician believed that the disease, which he describes as the 'contagious and accursed bubas,' arose in Spain in the reign of Ferdinand and Isabella. The year of the publication of the work of Villalobos was that in which, says Mr. Gaskoin, Charles VIII. died, after his tremendous raid into Italy; five years had gone by since Columbus returned from America with the first announcement of his discovery; and three or four years had elapsed since syphilis was so notorious in Europe, viz., in 1498. It seems that Dr. Lopez de Villalobos was born in 1473, and should certainly be a good authority on that account. The year in which syphilis was declared to be epidemic is stated to have been 1494. Villalobos could then surely judge whether it was a new disease or not, as it is said that one-twentieth of the people of Spain were eventually attacked by it, and he was made physician to King Ferdinand, showing that he was probably an able man. M. Ricord says, with much wit, that the origin of syphilis is like that of the Fine Arts, a mystery.

Dr. Alfred Fournier, the distinguished professor, whom the Ecole de Médecine of Paris has appointed as lecturer on syphilis, published, in 1870 and 1871, two most interesting

translations from the works of Fracastor, written in 1530 and in 1546. The first is an elegant poem in the Latin language, and the second a prose treatise. Fracastor was born in 1483, and in the latter work asserts that syphilis was a new and unknown disease, which broke out in Europe about ten years before the end of the fifteenth century. He mentions how that at first none of the regular physicians would treat the disease, which they abandoned to charlatans, and Fournier thinks this is the reason why it became such a terrible ailment in these early days. He thinks the disease at that time very much resembled what it is at present, sometimes severe, but often mild. Fracastor describes the latency of incubation, the primary lesion, the secondary symptoms, phagedænic and malignant, infantile and hereditary syphilis. He speaks of the treatment by guaiacum and mercury, alleging that the latter remedy was often used in skin diseases, and was then made use of in syphilis in the form of frictions and ointments. He gives a description of ulceration of the palate; and denies that syphilis came from America. The second work edited by Dr. A Fournier was written in 1527 by Jacques de Béthencourt, and treats of the nature and treatment of the *morbus gallicus*. It is a contagious disease, he says, and also given by infants to their nurses, or *vice-versâ*. It is hereditary; there is always a primary symptom on the spot infected. He speaks of early eruptions and of bone disease, liver disease, and destruction of the nostrils and larynx; also of cachexy; alleges, too, that lesions occurring after many years are no longer contagious. He gives a long account of the guaiacum treatment of forty days' duration. Béthencourt believed that syphilis was never cured without the aid of art. The mercurial frictions, he says, are to be used twice daily for a week in a warm chamber. Here is his opinion as to the history of syphilis: 'Some physicians say that this disease existed in times prior to our own. This opinion has no foundation, and is in no way confirmed by the writings of the ancients.' This seems conclusive.

The author has recently read over many of the works which treat of the origin of syphilis; and, commencing as he did with doubt, has become gradually convinced that syphilis is a modern pest, and the epoch of the origin of the disease nearly coincides with that of the landing of the crews of the ships of Columbus in 1493, in Lisbon, Seville, and other parts of Spain. Such authors, however,

as believe in the ancient existence of syphilis, affirm that not only Job and King David, but that the Emperor Augustus suffered from this disease, and also Tiberius Cæsar, and Galerius Maximus. They also quote Hippocrates, who, in one phrase, in his treatise *De morbis*, speaks of 'pustulas magnas, et pustulas corpori universo erumpentes: ulcera fœdissima circa pubem.' Dr. Verneuil, of Paris, has published some documents (*Arch. gen.*, Paris, 1863), to show that the Chinese, long before the Christian era, besides knowing very well about venereal diseases, had also known about mercury as a most efficacious remedy against syphilis. A document which, if genuine, would prove the antiquity of syphilis, is spoken of by Captain Dabry, French Consul at Hang-Kean, in China. This gentleman asserts that the document in question had been extracted from a treatise written in the reign of Hoang-ti, or 2,637 years before Jesus Christ. (*La Méd. chez les Chinois*, Paris, 1863.) Unfortunately, we are at once compelled to doubt of the authenticity of this work, when we notice the great precision of the descriptions of syphilis made therein, considering the times in which they are supposed to have been written. Indeed, there is in this treatise a most exact description of gonorrhœa, of indurated, phagedænic, and serpiginous sores, of intra-urethral sores, of buboes and warts, and likewise of the secondary symptoms occurring after syphilis. And then, most suspicious of all, mercury is described as a quite specific remedy, even in those days. Another argument against belief in this document is, that there is no mention made of hereditary syphilis in it. M. Robert, of Paris, thinks that Job in the Bible was afflicted with syphilis, but it seems much more reasonable to suppose that his disease was leprosy: and as to the pains of the bones spoken of by King David, there is not the slightest proof of their having been of a syphilitic nature. As to the expression above quoted from Hippocrates, there seems no reason to say that the ulcers mentioned were syphilitic; they may just as well have been scrofulous ulcerations. Littré, the French medical writer on philosophy, says: 'No trace of syphilitic affection is seen in antiquity; but a crowd of affections of the genital organs are noticed there, which do not refer to any syphilitic specialty.' We are of M. Littré's opinion, which is that of Fournier.

Whence, then, did the disease come to us? 'Although' (says Dr. Ferrari, *Lo Sperimentale*, Oct., 1871) 'the Ameri-

cans accuse the Europeans of having carried this disease to them, nevertheless, according to the opinion most universally adopted by the learned men in the Congress of Nantes, in 1835, it would seem that it is a disease of very ancient origin in America, and that, according to Bechi and Sanchez, it came to Europe only at the end of the fifteenth century, brought by the companions of Columbus. There is, indeed, a most powerful argument to prove this, mentioned by Columbus himself, who asserts that, when he returned the second time to the New World, he found among the Spaniards who had been left there, to study the manners of the savages, a monk, who, having learnt their language, was able to tell him what he had observed, and particularly the fact that, among the Indians, there existed very commonly a disease which they called *caracaracol*, and which showed itself as a scab over the body. This, too, is just the time when we notice that syphilis arose throughout Europe, for the first time. Antonio Benivieni, a most distinguished physician of that time, writes: "Novum morbi genus anno salutis nonogesimo sexto supra mille quadrigentos a christianâ salute non solum Italiam sed fere totam Europam irrepsit. Hoc ab Hispaniâ incipiens per Italiam ipsam primum tum Galliam cæteresque Europæ provincias late diffusum mortale quamplurimas occupavit." In the same strain wrote Allessandro Benedetti (1496); Corradino Gilino (1497); Gaspar Torella (1497); and Bartholomeo Montagnana (1498); and a little later, G. de Vigo (1514); G. Fracastor (1546); Antonio Brassavola (1553); and Gabriel Fallopius (1566). And if we desire yet ocular testimony, we may cite the physician Diaz di Isla, and the historian Oviedo, who both had numerous opportunities of speaking with Genovese, in Barcelona. Besides these, Guicciardini and Bembo speak of it as quite a new disease.

'The 4th March, 1493, was the miserable day,' exclaims Ferrari, 'in which syphilis appeared in Europe—Lisbon, Seville, Barcelona, and Gallizia, where the ships of Columbus landed, were the first spots rudely infected. In Barcelona, as Dias di Isla narrates, the venereal disease was shortly so spread, that public prayers and fastings were offered up to God, in order that they might be delivered from it. When in the month of August, 1494, Charles VIII. went with a large army to Naples to conquer that kingdom, from thence gradually also in Italy the terrible disease spread itself, so that the French called it *mal de*

Naples, and the Italians called it *mal francese*. Lastly, the return of these soldiers to their native land diffused syphilis in Switzerland, France, and in every other part of Europe abundantly, and by commerce it then passed on to the coasts of Africa, among the Turks, Persians, Chinese, and people of Japan.' Fournier thinks there is no sufficient proof that syphilis existed among the inhabitants of the new world at the time when the Spaniards landed in America. See also a work entitled *Dissertation sur l'Origine de la Maladie Vénérienne*, in which Sanchez, writing in 1752, tries to show that the disease did *not* come from America, but arose in Europe by an epidemic. The author is rather inclined to agree with Dr. Ferrari; but, at any rate, has no doubt that syphilis was an entirely new disease in Europe in 1493, or thereabouts.

Syphilis showed itself at first with much greater gravity than at present, says Ferrari; both primary and secondary symptoms came on more rapidly. Christoforo Girtanner says (*Trattato s. la mal. Ven.*, Venice, 1801), that a few hours after impure congress, there showed itself in the prepuce or glans a rather itching vesicle, which quickly opened and became a chancre. In a few days universal lues followed. Over the whole body and face there appeared pustules the size of a pea, or sometimes a little nut, sometimes a little larger. These appeared red and inflamed, and were accompanied by great pain, but did not pass into suppuration. To these were associated most cruel pains in the bones by night, and exostoses of all kinds, which became inflamed, and sometimes degenerated into caries. Cataneus describes syphilis as: 'Monstruosus morbus nullis ante sæculis visus totoque in orbe terrarum incognitus, fœditate magnâ, innumeris pustulis ulceribusque per totam faciem universumque corpus mulieres virosque deturpans.' And that the disease declared itself in a most terribly frightful manner, is argued again by some, in that the poor patients were, from the first, abandoned by every one, and even by the physicians, who, however, becoming ashamed that the sentiment of charity was extinguished in them, along with the love of science, commenced soon to think seriously of how to succour them. The Parliament of Paris, in its decree of March 6th, 1497, expelled from Paris all who were suffering from the *grosse verole;* adding that the poor were to be transported to Saint Germain des Près, where they were abundantly provided with necessaries.

A similar law was passed in the same year by the King of Scotland.

Twenty-five years after this, syphilis began to become more mild, which Fournier attributes to treatment, and its contagion more restricted, its symptoms less intense, death less speedy, and especially much rarer; but what is singular is that, just as the disease diminished and became less malignant, its manifestations increased in number. From this circumstance, the physicians who studied this disease discovered many new facts regarding it. In fact, G. Torella, among the first, and then Sebastian Aquilanus, Cataneus, Benedetti, Massa, Fallopius, Botallus, and many others, noticed that syphilis was able, also, to be transmitted by nursing. Vigo, in 1514, speaks of exostoses, and distinguishes syphilis into confirmed and non-confirmed; and further on Massa says that syphilitic dyscrasia only follows after non-suppurating buboes. Fracastor, Monti, Benedetti, Lenocenus, Cumanus, and Torella, exclude suppurating buboes from among the symptoms of syphilis; and Torella, Pario, Fracanziano, and Botallus, remarked that the ulcer of syphilis is hard and indolent. Gaspar Torella (1498) remarked that dry eruptions are generally seen in syphilis, and Benivieni (1502) says that large pustules which became ulcerated were the rarest forms of syphilitic affections. Torella, the most celebrated writer on syphilis of his times, divided syphilitic skin diseases into dry and moist. Benivieni described five species of syphilitic pustules; and Fallopius distinguished them into *pustulæ sine cortice*, and *pustulæ cum cortice*.

On the other hand, many object to the view that syphilis is a modern disease. Dr. Lancereaux and other able writers say that it has always existed in Europe. Readers of Celsus will remember how phagedænic chancre of the penis is described, and treated by that physician by means of the actual cautery; and Aretæus, in his work entitled 'De Causis et Signis Acutorum Morborum,' book iii., chapter 8, says that in some persons the uvula is destroyed to the bones of the palate. And it is said that Marcellus Empiricus makes mention of 'ulcera tibiarum qua intrinsecus serpunt,' and which, it is contended, can only refer to syphilis, and to no other disease. Martial, in the seventh book of his Epigrams, speaks of a family in the following terms:

Ficosa est uxor, ficosus est ipse maritus.
Filia ficosa est, et gener atque nepos.
Nec dispensator, nec villicus ulcere turpi,
Nec rigidus fossor, sed non arator eget.'

In addition to these quotations, we hear recently that Prescott and Irving in America have given it as their opinion that the Americans had received syphilis from, not given it to, the Spaniards under Columbus. Michel Scotus, in his 'De Procreatione Hominis Physionomia,' written in 1477, shows, some contend, the connection existing between affections of the genitals and the lepra of that period in the following sentence: 'Si vero mulier fluxum patiatur et vir eam cognoscat, facile sibi virga vitiatur, ut patet in adolescentulis, qui hoc ignorantes, vitiantur quandoque virgâ, quandoque leprâ.' Dr. Lancereaux, of course, does not believe in the view that syphilis was imported into Europe by the sailors of Columbus.

Now that oceanic steam navigation has made the planet we inhabit comparatively well known to us throughout, we are beginning to find traces of syphilis everywhere, and to understand that the names of 'Yaws' and 'Frambœsia' in Africa, of 'Sibbens' in Scotland, and more recently, of 'Radesyge' in Norway, all mean nothing more nor less than secondary and tertiary syphilis. Amboyna pimples, and the Pian of Nerac, which in 1780 appeared in St. Paul's Bay, Canada, are nothing more than this contagious disease, which committed great ravages among the Indian tribes. In their case, the disease seems to have been extensively spread by the lips, as we, indeed, frequently enough witness in London at present. In some other instances, as at Brunn, and at Nerac, the disease, when epidemic, has been transmitted by means of kitchen utensils, and linen, etc., much more than by coitus.

In Iceland, it is curious (if we are to believe the assertions of Dr. Hjaltelin) that this fell contagion has not been able to become established; and the same is reported with respect to the Faroe Islands; but, in Norway and Sweden, the disease is severe, probably owing to the inclemency of the climate; and its treatment is eagerly debated by some of our most learned brethren in Christiania almost every year. In this country the disease is widely spread, especially in our army, which is composed of a number of grown-up men who are not allowed to contract any domestic ties. The consequence of this is that, in the home army in 1860,

for instance, the amount of contagious diseases, including, of course, much true syphilis, was such as to account for the loss of 8·69 days of service per head; whilst in France, during the same year, there was a loss of only 3·90 days per man from venereal diseases. Doubtless this is owing in great measure to the fact that concubinage is very prevalent in France among all the humbler classes, and not to the Contagious Diseases Acts of that country in any great degree, since there is but little venereal disease among our troops in the West Indies, owing to the fact that the native women there live maritally with the troops. Syphilis and like contagions are very prevalent in India, China, and Japan, and commit great inroads on the health of our celibate troops in these countries. New Zealand was free from the disease until Captain Cook's sailors imported it into the island, and in Tahiti this contagion at first caused immense damage to the native population, although it is now much milder in that charming island. Dr. Livingstone contends that both syphilis and phthisis are unknown in Central Africa. Of course, wherever commerce has penetrated the disease is to be found. This is one reason why commerce is by no means an unmixed benefit to the human race. It appears that, in the Gulf of Guinea, syphilis is one of the most fatal diseases which males are subject to. Lancereaux contends that the circumstances which in certain places appear to aggravate syphilis, such as want of acclimatisation, hard work, excesses, over-crowding, and, *perhaps* also, contamination from one race to another, are precisely those under which the epidemic of 1495 developed itself. 'Thus everything,' he says, 'leads us to believe that the epidemic disease of that period did not differ, either as to its cause or its nature, from certain cases of syphilis in our own day, occurring, for the most part, under special conditions.' Some authors hold that syphilis, like variola, is probably milder now-a-days, because our ancestors have suffered from it to such an extent. This is possible.

What is Syphilis?

It is not so difficult, perhaps, to answer the question, What is syphilis? as its converse, What is not syphilis? Has soft chancre any relationship to the disease? Is gonorrhœa always quite another affair? These are questions

which to some appear easily enough answered: but these persons are generally found among those who have read more than they have seen patients, or interrogated nature. In 1542, Vigo divided the French disease into two periods, under the headings 'morbus non confirmatus,' and 'morbus confirmatus.' Thierry de Héry divided the drama of syphilis into three acts: the ulcer, the eruption, and the period of exostosis and caries of the bones; and Ricord, in 1856, in his 'Lettres sur la Syphilis,' has a somewhat similar nomenclature. Bazin, the distinguished French writer on skin diseases, adds a fourth act to the drama: the quaternary period, when the internal organs are affected. Virchow speaks of two periods in syphilitic symptoms: the period of marasmus and cachexia, with degeneration of the viscera, and the period of inflammation and neoplasms. Other authors are inclined to leave out these stages, and merely treat of the disease as one long act, co-extensive in some cases, if not in most (as proved by the rarity of fresh attacks), with the life-time of the patient. There can be now no doubt that syphilis resembles small-pox, measles, and scarlet-fever, in so many respects as to make it perfectly allowable for us to classify the disease among virulent diseases. No harm can now be done by such a classification; and, if we mistake not, much light will be thrown on the various facts in the evolution of the disease by considering it as a poison which has sequelæ, just like measles, scarlatina, or glanders. First of all, there is a variability in the time of incubation in all virulent diseases. In scarlatina, the period is from a few days up to three weeks, or even more. Typhus fever is said to incubate from three days up to forty days; and hydrophobia has an incubation period of from a few days up to several months. According to Dr. Marsh, in the Dublin Hospital Reports of 1827, inoculated variola had an incubation of from four to eighteen days; and, even in vaccination, cases are mentioned where the pustule has only commenced to show itself the seventh, nay, as late as the twentieth day. In 1863 the author of this work published, in the 'Medical Times and Gazette,' the case of a gentleman who wounded his finger whilst sewing up the abdomen of a woman who had perished from tubercular peritonitis. *Thirty* days after this, abscesses appeared in the palm, and he was in a most critical condition for some time. Syphilis, too, has a variable time of incubation, like the fevers.

CHAPTER IV.

NOSOGRAPHY.

ABOUT the first half of the sixteenth century physicians began to confound venereal and syphilitic diseases. Thus G. Vella (1508) and Antonio Brassavola (1551) referred all venereal disease to the same origin, the latter in a work on the 'French Disease.' So that, until the days of Hunter, the whole doctrine of such diseases fell into the greatest confusion. It was from this epoch that we may say that the doctrine of unicity of venereal sores and gonorrhœa may be traced, and it was upheld by Swediaur, Vacca, Barbantini and John Hunter, as it is partly in our day by Sperino, Lagneau, Lane, Gascoyen, Hutchinson, Paget, and others. One author (Devergie, senior) has remarked that no better proof of unicity exists than the fact observed by him, that of three men who all had connection with the same woman, one contracted urethritis, another an ulcer, and the third a different lesion. Swediaur relates that he treated three women for syphilitic ulceration of the tonsils after a gonorrhœa, of which they got rapidly well—thanks to mercury; and Baumés relates how that five persons became affected with syphilitic eruptions after gonorrhœa.

Experiments, indeed, seemed to have confirmed observers in this way of thinking, since Hunter, having inoculated himself on the penis with gonorrhœal pus, saw two ulcers arise, followed later on by symptoms of constitutional syphilis. However, the experiments of Balfour, Bell, Bosquillon, Hernandez, and of the School of the *Midi* of Paris, were opposed to these views, and by that school it is now clearly proved that even the urethra may, in any part, be the seat of ulcerations, which are, in such cases, the origin of syphilitic infection. To Ricord it is that we owe the discovery of the hidden chancre in 1838. The idea of

an urethral ulcer, indeed, is very ancient, since Celsus believed that gonorrhœa was derived from an ulcer of the urethra; and Mayerne asserted the same during the last century. This view was held in England until John Hunter disproved it by *post-mortem* examination of the urethra of some men who were executed whilst suffering from gonorrhœa (see specimens in the Royal College of Surgeons of England). There can be no doubt that gonorrhœa may be virulent when ulcers exist in the urethra.

Unicists, however, insisted that hidden urethral chancres were very rare compared to the numbers of cases of syphilis appearing after gonorrhœa; in fact, of three hundred and eighty inoculations made by Lafont Gouzy with pus from gonorrhœa, only twice was any ulcer seen to follow; whilst Ricord, out of four thousand six hundred and ninety-two cases of syphilitic eruptions, verified the existence of a previous ulcer in four thousand and eleven cases, and in six hundred and eighty-one cases an ulcer and a gonorrhœa together had preceded the eruptions. Ricord thinks that the hidden urethral chancre only occurs about once in a thousand cases of gonorrhœa. And in clinical experience, we know very well how very rare it is to see syphilitic eruptions succeed to gonorrhœa alone. The identicists, however, say that Martins, out of sixty cases of syphilitic skin disease, noticed that gonorrhœa had preceded it forty-six times; and that Cazenave had noticed the same in eighteen cases out of sixty-two. But to this it is replied that such reasonings are erroneous, because the first of these authors had merely drawn his information from the words of the patients themselves; and Cazenave had taken for syphilitic eruptions, in many cases, the eruptions caused by the use of balsamic remedies. Thus, we may conclude that there is no identity between gonorrhœa and ulcers, for three reasons: (1) That pathological anatomy and experiment have proved now-a-days, in a manner which admits of no doubt, the existence of the hidden chancre; (2) That in conjunction with the rarity of hidden chancres, is the rarity of syphilitic disease or soft sore after gonorrhœa; (3) That such gonorrhœas have, by means of inoculation, been recognised to be symptomatic of hidden ulcers.

Unity and Duality.—Gonorrhœa being thus considered as an entirely local disease, the power of causing infection resides, according to the mass of syphilographers, in the two forms of venereal ulcers; and thus arose, in 1838, the

doctrine of unicity, which, however, did not last long; for, in 1851, Bassereau proclaimed to the world the doctrine of the duality of syphilitic sores, one being entirely local, the other, according to that author, a true virus. He proved his theory partly from history, asserting that, whilst in the ancient authors ulcers are mentioned, there is no mention of any special dyscrasia like syphilis in their writings; whereas, when syphilis first appeared, Torella, Vigo, Botallus, and Fallopius said that the ulcer which preceded this disease was very unlike that described in the writings of the ancients. These facts, which were thus demonstrated *à priori* by Bassereau, have been confirmed since then by many other observations besides these of their author, by Clerc, Diday, Rollet, and Fournier, by all of whom the just nosological distinction between these ulcers has been shown. These differences have been thus expressed:—(1) That whilst the one sore is usually solitary and rather unfrequent, the other is generally multiple and much more frequent. (2) The first is painless, the second generally painful. (3) Whilst the one sore secretes very little, is usually superficial, and with a process of adhesive inflammation, healing *without* a scar, the other has an abundant secretion, is excavated, with sharply cut edges, and with its floor covered with abundant granular exudation, and heals *with* a scar. (4) The one is *generally* indurated at its base, the other most frequently is soft, or has only the induration of inflammation. (5) The one is not inoculable on the same individual, says Bassereau, does not become diffused, and very rarely, indeed, becomes phagedænic, or gangrenous; the other is auto-inoculable on the patient, and is easily inoculated on the neighbouring parts, as also frequently complicated by phagedæna and gangrene. (6) The first has an incubation of twenty-five to thirty days, the second has no incubation. (7) In the one there are many of the inguinal glands enlarged, but these are indolent, and scarcely ever suppurate; in the other there is no necessary induration of the glands, but whenever there exists a mono-glandular bubo, it generally suppurates and becomes an ulcer. (8) The first kind of ulcer is only seen in the human race, the other is transmissible to animals.

These distinctions were derived from the following data. (1) With regard to the number of the ulcers, it was observed at the Hôpital du Midi that, of two hundred and fifty-four patients with 'soft sores,' one hundred and sixteen had

from three to six sores; forty-one patients had from six to ten ulcers; and eight patients had from ten to fifteen ulcers. Again, of four hundred and fifty-six cases of 'hard sore' noted by Fournier, two hundred and twenty-six patients had only one ulcer, and one hundred and fifteen had more; but scarcely any had more than two or three. Clerc, of Paris, out of two hundred and sixty-seven patients, found, in two hundred and twenty cases, only one hard sore. With respect to the comparative frequency of hard and soft sores, no general rule can be laid down about this. It used to be found that the soft sore was much more common in the Hôpital du Midi than the hard sore or initial lesion of syphilis. Thus, Dr. Puche, some twenty-five years ago, noticed, among the male patients attending that hospital, that, of ten thousand sores, only one thousand nine hundred and fifty were followed by secondary symptoms, whilst Dr. Alfred Fournier noticed that, in private practice, hard sores were far more common. Of late years this ratio, as to frequency of the venereal sores, has been strangely reversed. Syphilitic sores have become six times more common in some years at the Hôpital du Midi, according to my respected and learned friend, Dr. Charles Mauriac, of that hospital. To give one example, I quote from his pamphlet entitled 'Rareté Actuelle du Chancre Simple,' Paris, 1876, how that in the half-year ending December 31, 1875, there were one hundred and ninety-nine cases of hard sore, as against only thirty of soft sore seen by him. Syphilis, indeed, and gonorrhœa have both augmented greatly of late years in Paris, whilst soft sores have become sometimes quite rare, a fact which M. Mauriac attributes to clandestine prostitution. It is generally, he says, only the poorest and most careless prostitutes that contract soft sores and spread them, and these women are just those who take no trouble to escape from police surveillance.

Induration arises without any inflammatory symptoms, whilst the 'soft sore' has notable swelling, redness, and other marks of inflammation. According to Robin, the induration consists of cellular tissue, with some cutaneous elastic fibres mingled with it, and Virchow affirms that the hard ulcer presents the same development as gummy tumours; and that there is a proliferation of the cellular tissue, in which the elements live for a time; finishing by softening, degeneration, and ulceration. (*Path. des Tumeurs*, Paris, 1869.)

The induration of the infecting sore is a sign of greatest importance in the differential diagnosis of the two forms of venereal ulcerations. The unicists, however, categorically deny the existence of this specific character of the infecting sore, because they have found it wanting in the female, in the majority of cases. For instance, they say that Melchior Robert, in four cases, found only once a distinctly indurated sore. Pirondi, of one hundred and fifty-seven ulcers in women, only noticed one which was truly indurated; and H. Lee, of seventy-one infecting ulcers, noticed only nineteen which were hard. Dr. Ferrari, of Pisa, remarks that, in his wards for venereal cases, he has pretty often found this character absent, especially in the fourchette, or the vagina; but this he has rather ascribed to the special nature of the tissues concerned, than to induration being really absent. In fact, Virchow has demonstrated that in these organs, where there is a want of connective tissue, the cells and nuclei of the 'sifiloma' would appear to be formed by the proliferation of the nuclei of the capillaries. I myself find but little difficulty in this point.

It may very well be, says Ferrari, that this exception in the case of women is due to the fact, that the proliferation of the anatomical elements of the 'sifiloma' takes place only at the expense of the nuclei of the capillaries, and hence it is very natural that hardness should be but little, or not at all, appreciable to the touch. Besides, according to Bumstead and Pellizari, it is most marked in the balano-preputial sulcus and on the lip. The unicists say that the ulcer which becomes hard is no longer an ulcer, but a true manifestation of syphilitic infection. But in opposition to this idea of theirs, is the confrontation, used by Bassereau, Clerc, Diday, Rollet, Fournier, and Cady. According to Sigmund, of Vienna, in seventy-one cases the induration appeared on the ninth day; in eighty-four cases, on the tenth; and in twelve cases, on the eleventh day. Specific induration ordinarily remains for some time after the ulcer has been cicatrised, and, according to the statistical results of Puche, its presence is rarer after the third month, and very rare indeed after the eighth month, although the said writer has observed in eleven cases that the induration was perceptible from three hundred up to two thousand six hundred and sixty-two days after contagion, and he gives one in which it remained nine years. Ricord saw, in one case, an induration remain for thirty years.

Clinical observation has shown clearly, that in the infecting ulcer there exists a period of incubation between the moment of contagion and the appearance of the ulcer, whilst in the other the appearance of the ulcer takes place in a few hours, or in two or three days at most. Diday, out of twenty-nine cases of infecting ulcers, found a mean of fourteen days of incubation; Chevalier, in ninety cases, found the incubation fifteen to eighteen days; Clerc found it to be thirty days in different cases; and Castelnau found it to be thirty days in one case, whilst Bumstead found it to be ten days in some cases. The unicists deny the existence of the incubation; and point to observations of Fournier and Diday, which showed the incubation period *sometimes* to be about five days. They also speak of the observations of Langlebert, Ricord, Bassereau, Melsens, Robert, Zeleschi, and Davasse, from which it would seem that, even in twenty-four hours after inoculation, the infecting ulcer showed itself. But to these reasons of the unicists, we may first of all remark, that the number of cases cited is so small as to constitute rather an exception than a rule; and in the second place, that the incubation was found to be always pretty long in cases when artificial inoculation was employed; just the cases when experiments might be made more accurately and precisely.

Delhomme inoculated from a true syphilitic ulcer in one case, in 1850, and there was an incubation of one hundred and eighty days. Rinecker, in 1852, found an incubation of twenty-five days. Bærensprung inoculated in 1859, and there was an incubation of thirty-three days. Danielssen, in 1853, saw a similar incubation of fourteen days. Rollet, in 1856, saw the incubation last eighteen days. Gibert, in 1859, saw syphilis when inoculated incubate nineteen days. Cullerier, in 1861, inoculated and saw an incubation of fifteen days. Fieni, in 1861, saw a case of twenty-one days' incubation. Waller saw a case of thirty-four days' incubation in 1851, after inoculating with the *blood* of a syphilitic patient; and Gibert, in 1859, a similar incubation which lasted thirty-five days. Pellizari, in 1860, made three inoculations with blood, and in one there was an incubation period of twenty-two days. Again, when the secretion of mucous tubercles was inoculated, Wallace, in 1835, made three inoculations, and the times of incubation were from twenty-three to thirty-six days. Gibert, in 1859, made two inoculations from mucous plates, and saw periods of incuba-

tion of eighteen and twenty-five days. Waller saw one which lasted twenty-five days; Guyenat, in 1859, one which lasted twenty-four days; Bærensprung, in 1859, one of thirty days; Lindwurm, in 1860, saw one which lasted twenty-six days; Galligo, in 1860, one which lasted seventeen days; Hebra, in 1861, inoculated with secretion from mucous tubercles, and the incubation period was sixteen days.

The secretion of pustular syphilitic eruptions was inoculated by Wallace in two cases, and there was an incubation of twenty-nine days; Vidal found, in one such case, an incubation of twenty-eight days; and Rinecker, in 1852, also inoculated from a congenital pustular syphilitic affection, and found the incubation period to be twenty-eight days.

As to re-inoculation, H. Lee ('Br. and For. Med. Ch. Rev.,' 1859) first of all pointed out how excessively difficult it was to re-inoculate the infecting ulcer, and this was proved by many other experiments arranged for the purpose. Fournier, in ninety-nine cases produced auto-inoculation only once; Puche, in one hundred cases, succeeded twice; Laroyenne, once in nineteen cases; Rollet, six times in one hundred cases; and Poisson had the same result in fifty-two cases experimented on. Diday believes that the greater or less capacity of the infecting ulcers to be re-inoculated depends on the period of the ulcer from which the secretion is taken. He thinks the best time to succeed is when the ulcer is in the period of invasion. Bœck, however, affirmed that all periods were suitable. Dr. Ferrari, of Bologna, thinks it is impossible that one infection can succeed another, and holds it only possible that new infection shall take place when the virus has abandoned the organism—a most rare case, but one alleged to be occasionally observed. The author has not seen any such case.

M. Ricord and Dr. Alfred Fournier teach that syphilis is only once contracted during the lifetime of the patient, whilst Lee, Lane, Gascoyen, and other English surgeons, have a contrary opinion. My own experience coincides with that of MM. Ricord and Fournier, and I think that when a fresh indurated sore has been supposed to have been seen, this must have merely been one of those sores which are apt to appear in the course of the secondary period of syphilis. In the cases cited by the late Mr. Gascoyen, there was no clear history of the persons who were supposed to have communicated syphilis to the persons suffering from a

second infection of syphilis. In many published cases the ulcer which appeared seems merely to have been a relapse of the old one which had existed before, and very rarely was there any mention of the multiple inguinal buboes, which are so constantly seen in first attacks of syphilitic infection. The mere external appearance of a sore is not enough to admit of any observer calling it a hard sore, for sometimes, in syphilitic patients, there may arise, spontaneously, sores which are extremely like the initial lesion of the disease.

As a general rule, then, the infecting ulcer is not re-inoculable, except when the syphilitic poison has entirely left the organism; otherwise we have to do with a mixed ulcer. The non-infecting ulcer is re-inoculable sometimes a thousand times on the same person. That distinguished Parisian physician, Dr. Auzias Turenne, whose life was one long devotion to science, had inoculated himself from head to foot with soft sores, although this was not known until after his death. The infecting ulcer is usually accompanied by multiple and enlarged glands, whilst the non-infecting either causes no alteration of the glands in the groin at all, or, when it does, there is but one gland usually affected on one side, which suppurates and ulcerates. This peculiarity, which is a great addition to the facts already mentioned, in showing the difference between the sores, is warmly disputed by the unicists, who adduce several cases to prove the contrary. Davasse cites eighty-nine cases gleaned from Fournier's work; the bubo was not verified except in one-third of the cases. In twelve cases the bubo was not noticed, in thirty-nine it did not exist, and in three it suppurated, whilst it was resolved in seven cases. This writer remarks that even when suppuration of the bubo took place, still constitutional infection sometimes occurred. Thus, in one observation, an ulcer appeared three days after connection, a suppurating bubo followed, and the patient had afterwards induration and syphilitic eruption on being inoculated from his own ulcer. (Ricord, "Traité de l'Inoculation," 1838.) In another observation, it is mentioned that an ulcer, which was followed by double suppurating bubo, was inoculable, and this was followed by pustules of ecthyma on the limbs and penis, and mucous plates in the genito-crural folds.

From the statistical tables of Bassereau it results, that of one hundred and sixty-seven cases of ulcers followed by

syphilitic skin eruptions, the ulcers were accompanied only thirteen times by suppurating bubo. Melchior Robert observed in eighteen cases of bubo symptomatic of infecting ulcer, that they terminated eight times in suppuration; and Bertini reports the case of a child of four months in which there was seen an infecting ulcer with suppurating bubo. To these cases dualists may say, that they may be examples of double inoculation, with secretion from both kinds of ulcers.

Two years after Bassereau had published his doctrine concerning the duality of the venereal ulcer, Clerc, in a work entitled 'Mémoire du Chancroide Syphilitique' (1854), also confirmed the fundamental principle of the said theory, adding, however, that as to the nosological connection of the two ulcers, he believed that the secretion of the non-infecting sore was a true modification of that of the infecting one, by passing through a system already a prey to the syphilitic dyscrasia, and that the said ulcer is fit to transmit itself indefinitely without again resuming its infecting power; he finds between the two ulcers the same analogy as exists between variola and varioloid, and between small-pox and vaccination, so that it appears just to him to call the infecting ulcer chancre, and the other *chancroid*. How much this theory is without foundation may be judged both from history and from clinical experience. Syphilis is a disease of the tissues and the blood, and in the blood, as well as in the liquids of nutrition, there circulate diseased cells and nuclei, which, being deposited in the tissues, disorder the normal function of the healthy cells and nuclei, so as to lower the nutrition and weaken the organs and their functions. And is it not proved by modern researches that these contagious elements do not have their properties modified in the system? The contagiosity of secondary symptoms and of the blood is a clear proof of this.

In 1860, Rollet, of Lyons, called attention to another fact. He observed that whilst the two ulcers might be both naturally and artificially inoculated, each in its own species, still their products might occasionally be found united, so as to form a composite ulcer, which he called *mixed*. The theory of this physician does not appear irrational, since we cannot see why it should not be true; and it seems also to explain well those cases of 'soft sore,' which, according to some authors, precede syphilis. H. Lee,

Bærensprung, and Sigmund, are, in fact, of opinion that in such cases 'mixed chancres' have been present. The mixed ulcer is probably only a mixture of the two elements of contagion, as sometimes happens with the pus of gonorrhœa and of ulcers.

There were formerly some, before the days of Rollet, who attributed the varieties of syphilis to the objective variety of the virus. Such was Carmichael, of Dublin, who spoke of four poisons, of which, although they were all capable of infecting the economy, some alone were incapable of being cured without mercury. But, as was natural, such ideas, finding no reception even in his native land, were very speedily abandoned. Langlebert thinks there exists but one ulcer-virus which is dissociated from the pus, and exists in the serosity. He thinks that the *soft sore* is 'the result of the action of the globules of syphilitic pus on a healthy or syphilitic person,' whilst the *infecting ulcer* is the product of the isolated action of the syphilitic serosity. According to him, the inflammation excited by the former sore is an obstacle to the virus entering the economy; but in this Langlebert is clearly in error, since now-a-days, thanks to the information afforded by the microscope and experiments, it is not admissible any longer to seek for the active principles of any virus in peculiar modifications of the albuminoid materials of the serum or pus. We ought to look for them in the solids. The experiments of Prevost and Dumas on the fecundating properties of the spermatozoids, and not of the fluid which surrounds them, and those recently by Keber, Chauveau, Beecham, and Mouchy upon vaccinia, variola, and the pus of *Charbon*, show this clearly. Langlebert, in order to sustain his thesis, invokes the experiments of Bœck, Köbner, and Bidenkap, of Christiania, who, irritating with powdered savine an infecting ulcer or a mucous-plate, which was in the process of healing, say that they obtained, by inoculation of the purulent product, a non-infecting ulcer. To this it may be replied that the assertion is far from having been verified, since the experiments have either not succeeded when repeated, or the lesion which ensued was only a simple wound, due to the local irritation of the pus elements, arising from a hyperplasia aroused by the irritation caused by the pus.

The conclusion I have come to after reading and carefully testing experimentally the views of Langlebert and the late Dr. Bœck and Dr. Morgan of Dublin, are those

put forward by Mr. Henry Lee in some excellent lectures on syphilis, given by him at the College of Surgeons of England in 1877. He thus speaks: 'I conclude that artificial inoculations, made on a syphilitic subject with matter from an unirritated primary or secondary affection, generally produces no result. In exceptional cases, some abortive form of the adhesive inflammation may take place. If, however, the secretion be taken from a primary secretion which has been irritated, or a secondary affection which is naturally inflamed, then the inoculation often succeeds, and fresh matter is formed, which tends rapidly to pass into suppuration. The thickening is not accurately defined, as in the primary disease. It gradually disappears in the surrounding parts, and a pustule forms in its centre and discharges. This is the common result in the experiments which have been made in the process of so-called syphilisation. When these inoculations heal, the new matter formed is equal in amount to that which is removed. There is no loss of substance, and often no cicatrix.'

After all, if we come to a general conclusion, it is necessary to admit that, among all the theories recorded, the one which has the most facts in its support is undoubtedly *dualism*. In Paris, at this moment, it may be said that there is scarcely any writer of eminence upon the doctrine of the chancre who does not range himself in the ranks of the dualists. In London, until a few years ago, this was also the reigning doctrine, owing to the teachings of Mr. H. Lee, Mr. De Meric, and one or two others. The well-deserved fame of Sir James Paget and of his most distinguished pupil, Mr. Jonathan Hutchinson, both unicists, has for some years past caused a reaction to take place towards the theory of unicity, which, in my opinion, has been most disastrous to scientific accuracy, and which, moreover, has rendered the statistics of syphilitic diseases in our army and navy valueless.

CHAPTER V.

PRIMARY SYPHILIS AND SOFT SORES.

As a general rule, it is very easy in the *male* sex to distinguish a soft chancre from a hard one, *i.e.*, from the initial lesion of syphilis. All who are familiar with the out-patient department of male Lock Hospitals are aware that it is only occasionally that there is much doubt as to whether a sore on the male organ is syphilitic or not. (Dr. R. McDonnell demurs to this.) In 1514, Vigo wrote in his work called 'Aphrodisiacus,' page 450: 'Nam ejus origo semper fere fuit cum pustulis parvis interdum lividi coloris, aliquando nigri, nonnunquam subalbi cum callositate eas circumdante;' and Fallopius in 1555, says: 'Quoties videtis sanatam cariem et quod remanent calli circa cicatricem, tenete esse confirmatum Gallicum.' As a general rule, when syphilis is inoculated on a healthy person, the first thing that appears is a papule, projecting a little from the surface of the skin or mucous membrane, which continues dry, becomes eroded, or ulcerates extensively. In cases where it continues dry, a small patch appears of a dark or brownish-red colour, sometimes covered by whitish scales. In the case where erosion exists, there is at first usually a copper-red spot, which desquamates, and is slightly ulcerated on its surface. This ulceration discharges but a small quantity of serous fluid, and has a diffused parchment-like base. It rarely lasts more than two months. The form most rarely seen, but the best marked of all, is the indurated chancre. It is said that first of all, in cases of this form, there is an induration which speedily passes into an ulcer. In some inoculations, the papule at first formed became covered with greyish scales, which ended in forming a crust, under which a cup-shaped ulcer was found. The hard chancre presents raised and rounded edges, a glossy iridescent and ecchy-

mosed surface, and greyish floor. Ecchymosis, as Dr. Mauriac, of the Hôpital du Midi, has often pointed out to the author, is very frequently seen in the floor of this ulcer. It is surrounded by a hard envelope, which gives a sensation of induration to the touch. In about six weeks cicatrisation takes place. The scar which remains is but slightly depressed, as is common also in syphilis of the skin. Induration sometimes persists for the patient's life. Of four hundred and seventy-one infecting chancres remarked by A. Fournier in the male, only twenty-six were extra-genital, and nearly half of these were on the lips. There were three on the tongue, and six at the anus. Syphilitic chancres in women are rare in the vagina, but not quite so rare on the os uteri. The author has usually seen them on the external surface of the larger labia, or at the clitoris. Gangrene and phagedæna are rare indeed in the history of syphilitic sores, although both of these have been seen several times by the author. When such ulcers become phagedænic, ecchymosis is commonly observed on the surface, and the ulcer spreads superficially. When mercury was more used than it is now, phagedæna in such chancres was far more frequently witnessed than it is at present for thanks to the labours of H. Bennett, and others, the induction as to the utility of mercury internally in hard chancres is fast becoming disbelieved in by many. As to the view that gonorrhœa is totally alien to syphilis, we have already stated that the sore may be in the urethra. For instance, a man recently in the Metropolitan Free Hospital, suffering from multiple exostoses of the tibiæ and bones of the fore-arms, had no recollection of any kind of lesion intervening since the time when, about thirty years before, he had suffered from gonorrhœa, and there were no scars on his body. This is but one of similar histories collected and noted by the author, and was probably a case of chancre in the urethra.

The soft sore has apparently been inoculated upon a number of the lower animals, according to Auzias Turenne, Diday, Ricordi of Milan, and Basset. The true chancre, I do not think, has ever been clearly inoculated, although some experimenters allege that it has.

Ricord, in 1838, said that it was a curious fact that soft sores were not seen on the head. Puche, in 1858, and Rollet, in 1857, inoculated the soft sore on the head and face in twenty instances: Bassereau, also, and Huebbenet, about the same epoch, did the same, and hence it may be

said that the question is settled. The only inference we can derive from the debate on this point is that, when a sore is met with on the head or face, it is infinitely more likely to be a true chancre than a soft sore. Mr. H. Lee looks upon the presence of pus, as seen microscopically in the secretion of a venereal ulcer, as evidence that it is the soft and not the hard sore.

The duration of the progressive stage of the soft sore varies a good deal, depending, of course, much on the treatment; but it rarely heals before four or five weeks have gone by, and may last indefinitely if phagedæna supervene. Gradually the floor clears up, and granulations are seen in certain parts of the ulcer, whilst the edges lose their reddish colour. At last, a fine membrane begins to extend from the margin over the surface of the ulcer; but it must be borne in mind that, in *all* of its stages, the ulcer is virulent, and inoculable either on the patient or other persons. Hence the importance of warning patients with such ulcers from all congress, until perfectly cured.

The ulcer in soft chancre implicates the skin in its whole thickness. The edges of the ulcer are clearly punched out, as if with a punch; and we usually find two or more such sores on the same individual. The floor of the ulcer is uneven, and covered with a greyish secretion; the discharge is abundant and purulent; its base presents to the touch the normal suppleness of the underlying tissues; the tendency is for the sore to enlarge and extend its area; but it rarely exceeds the size of a shilling. A white cicatrix remains without any induration. There is often considerable pain felt by patients suffering from this variety of sore. The phagedæna, which not so very unfrequently accompanies this form of chancre, is often very formidable, and has occasionally been known to destroy life, remaining unchecked even by actual cautery and the strongest caustics known in medicine.

The only unfailing test of the soft sore is that of auto-inoculation; but, if there be a suppurating bubo, which is the case in about one third of all cases of this ulcer, the diagnosis is much aided. Auto-inoculation is best made on the chest below the mammary gland, as it is there most easily cured by caustics. Tertiary syphilitic ulcers about the penis are very like soft sore, but iodide of potassium heals the former.

The soft sore, when uncomplicated, is of much less grave

import than the hard sore, or than gonorrhœa, since it does not infect the constitution and does not cause a dangerous stricture. When complicated, however, it may do serious mischief, for, where phymosis exists, gangrene and loss of the prepuce may be the result of soft chancre. Suppurating bubo may confine the patient for months to bed, and phagedæna may go on destroying the surface and causing misery and suffering for years. It is, however, an immense boon to an intelligent patient, when we are able to inform him without delay that he has merely a soft sore, and that his constitution will not be damaged.

Buboes.

During the so-called primary stage of syphilis, and in the course of the soft-chancre, certain inflammations of the glands are met with, which require careful consideration.

Thiery de Héry says with regard to buboes, that the most certain sign of syphilis is when, after or during the existence of ulcer of the genitals, we find tumours in the groins, which do not suppurate. Three kinds of swellings of glands in the groin are observed: the simple or sympathetic, the virulent, and the indurated. In the case of sympathetic buboes, there is not much to be said, seeing that this form differs little from the glandular swellings remarked in ordinary irritations; but in about one quarter of the cases of soft chancre, virulent monoglandular buboes are perceived, which almost always suppurate, and which furnish inoculable pus. It has been estimated that about 40 per cent. of males suffering from soft sores are liable to have suppurating buboes in the groin; and it is well known that men are much more liable than women to such suppurating buboes. When merely sympathetic buboes succeed to soft sores, we find that, when the bubo suppurates, its pus is not virulent or inoculable. These sympathetic buboes, however, are by no means always of slight importance, since in peculiar constitutions, when once an abscess has appeared in the groin, it may continue, and form sinuous fistulous tracts, running generally along the line of Poupart's ligament, and the skin above them may become riddled in all directions. The sympathetic bubo may also become indolent, and large tumours may form in the inguinal region.

The *virulent* bubo is a true 'soft-sore' of the gland, and the pus taken from it is auto-inoculable. It cannot arise unless

there be a soft sore present on the genital organs, and the only way of preventing its appearance is by destroying the soft sore. Such buboes inevitably suppurate. This form of bubo has been named the 'bubo from absorption,' which indicates the way in which it originates. It may occur at any time whilst the soft sore is present, even if that time should embrace months or years. Virulent buboes have been produced in the axilla by inoculation of the soft sore on the arm.

Virulent buboes in the groin are found always to be inflamed *superficial* glands, never *deep* glands, in that region; and they are usually situated on the same side as their cause, the soft chancre. They are called 'monogangliar,' because it is extremely rare for more than one gland to suppurate virulently. Whenever a bubo undergoes complete resolution, we may feel assured that it was not virulent. When such buboes open, the edges of the abscess become everted and undermined, whilst the floor is covered with a greyish deposit, just like the soft sore. Fistulous passages may be produced in this variety of bubo, as well as in the sympathetic bubo; but the effect of the burrowing in such cases is sometimes most disastrous, from the acute inflammation it excites in the cellular tissue.

In many cases, however, such buboes heal in a few weeks, and thus it is not uncommon for virulent buboes to remain unrecognised as being auto-inoculable. This form of bubo is the only one capable of taking on phagedænic action, and that even when the original sore has shown no such tendency. Such phagedæna may be limited in extent, and yield easily to treatment; it may put on the form of sloughing phagedæna, or may be of the serpiginous variety. The last variety is one which is seen from time to time in all hospitals which admit venereal cases; and it would seem that such serpiginous sores are more apt to follow upon virulent buboes than after chancre on the genitals. Fournier (*Nouv. Dict.* tome v. p. 771) mentions a case where an unfortunate man had a serpiginous sore for fourteen years.

CHAPTER VI.

THE SECONDARY OR ERUPTIVE PERIOD OF SYPHILIS.

THE classification made by M. Ricord of the general symptoms of syphilis into primary, secondary and tertiary was founded on Mr. Hunter's division of 'parts first in order, and parts second in order.' There is much utility in the division made by Ricord, because, as a general rule, the treatment of the lesions in these stages differs, and, moreover, secondary as well as primary symptoms are inoculable, whilst tertiary symptoms are probably not often capable of being inoculated. Secondary symptoms rarely occur before three weeks after the appearance of the hard sore, and very rarely after the sixth month; whilst tertiary symptoms rarely occur *before* the sixth month, and often not until many years have passed. In the secondary or eruptive period we see certain eruptions on the skin and mucous membranes, falling of the hair, iritis, and enlargement of various glands throughout the body, especially in the groins and neck. The tertiary period is characterised by gummy deposits in the tissues, and by certain inflammations of destructive nature. Some authors allege that tertiary syphilis in the parents may be followed by syphilitic hepatitis and deep tubercles of the subcutaneous cellular tissue in infants affected with hereditary syphilis. (Virchow, 'La S. Const.', 1860).

Infinite varieties occur in the epoch of the appearance of the several symptoms of the secondary or eruptive stage of syphilis; but from a number of observations made by Bassereau, Sigmund, Fournier, etc., it has been estimated by a Parisian writer, Mr. Martin, in 1863, that roseola, papular eruptions and mucous patches may occur as early as about the twenty-eighth day after the appearance of the hard sore, and as late as from twelve to eighteen months; that secondary affections of the fauces, vesicular eruptions and

pustular eruptions, may commence as early as the fiftieth day, or be deferred to from six months to four years after the chancre. Rupia may arise as soon as the seventh month, or be postponed for four years: iritis may supervene on the sixtieth day, or only arise in the thirteenth month; whilst sarcocele may arise as early as the sixth month, or as late as three years subsequent to the hard sore.

Those eruptions which are tertiary in character, such as the tubercular and serpiginous ones, seem almost never to arise before the completion of the third year, and may occur twenty years after the primary lesion, or even more. Bassereau, and many of the best authors in Paris and London, allege that the administration of mercury for the primary sore has a decided influence in preventing secondary eruptions. I do not think that this fact is by any means proved, and, at any rate, in myriads of cases of syphilis where the primary sore is thus treated, roseola, iritis, and other secondary symptoms are known to have occurred.

Syphilis in the secondary period is perhaps more truly visceral in character than at any subsequent period, as is seen by the fever which occasionally occurs, and by the anæsthesia caused by it in various parts of the body. In an able monograph on 'Secondary Syphilitic Analgesia,' written in 1869, Fournier, of Paris, brought forward numerous cases to prove how commonly women suffer from anæsthesia of various parts of the body in secondary syphilis. Sometimes, as I have myself witnessed in the Rescue Society's Hospital, women with secondary eruptions are so profoundly without sensation, that a pin may be thrust into the mammary gland without giving pain. In such cases the women are also almost insensible to difference in temperature. The back of the hand is generally most affected, and sometimes this is the *only* part of the body affected. This analgesia usually occurs during the first month of the eruptive stage, and lasts a few weeks or a month or two.

That secondary syphilis sometimes causes loss of appetite has long been known; but it is only in quite recent times that it has been remarked as a cause of still stranger disturbances of the functions of nutrition. Thus, Dr. Alfred Fournier has written a most interesting 'Note sur certains Cas Curieux de Boulimie et de Polydipsie' (Paris, 1871), in which he mentions that, in certain cases of secondary eruptions, in women, there is a temporary exaggeration of appetite. A scrupulous study of fifty observations occurring

in three years has convinced him that, in such cases, boulimia has resulted from syphilis, and generally appears at an early period of the disease. In some cases, the female patients in the Lourcine desire to eat and drink the whole day long. This symptom is rare indeed in males, although it does occur in very young men occasionally. It always occurs in company with other nervous affections in female syphilitic patients. In one case, that of a young woman, aged twenty-three, the patient complained of extraordinary appetite, the like of which she had never before experienced. According to her own expression, 'she devoured.' Simultaneously with boulimia, there appeared fever, with pulse 120, and a temperature of 38·4 C. in the axilla, with polydipsia and diarrhœa.

The coincidence of a voracious appetite with febrile symptoms, almost amounting to typhoid in character, was very remarkable, as also the fact that the tongue remained quite free from any deposit. Some of these patients are famished in an extraordinary way; so that, in place of eating four or five hospital portions (a quantity of food amply sufficient for an adult in good health), they can eat as many as six, seven, eight, nine, ten, and even sometimes more. The ration of a patient in convalescence in Parisian hospitals at present is composed of four portions: white bread, four hundred grammes; two soups of thirty centilitres, one a meat soup, the other without meat; meat, two hundred and ten grammes; vegetables, forty centilitres; wine, thirty-six centilitres, or, if patients desire it, wine, eighteen centilitres, and milk, one litre. This is amply sufficient for most of the female patients in the Lourcine; but boulimic patients, in addition to eating the double of this, greedily devour what their companions leave. One of these patients mentioned that, one day, after breakfasting well, better than most persons in good health, she at once commenced a second breakfast quite as large, on the food left by her companions. Another eat daily twelve portions of bread, not to speak of her ration of meat and vegetables, and yet 'could have eaten far more, if she had only listened to her appetite.' This boulimia is usually accompanied by great thirst. Such patients drink two or three litres a day. This exaggerated injestion of food is, in some cases, followed by no very bad result; at other times it produces colic, nausea, and vomiting, dyspepsia, and diarrhœa, which is the most common symptom. The diarrhœa is in some cases

singularly obstinate, unless the patients eat less; but they expressed themselves as being so hungry that they must eat at every hour of the day, and even of the night.

These symptoms of boulimia sometimes remain in patients for many months. In one case it lasted as long as seven months, although the patient was treated first by iodide of mercury pills, next by injections of corrosive sublimate, which gave her much pain, and lastly, took as much as twelve grammes of iodide of potassium daily, *i.e.* three drachms of the salt in twenty-four hours. This patient retained her good looks, and did not lose flesh; but, in many cases, patients become thin and weak during this boulimia. Certainly, one of the most extraordinary facts in the boulimia of secondary syphilis is, that it sometimes is noticed, as above stated, with marked febrile symptoms. Thus, patients laid up in bed by fever, where the pulse rises to 120, and the temperature in the axilla to 39—39·5—39·8 C., are sometimes tormented by the anguish of an extraordinary appetite, and absorb a quantity of food double, triple, or quadruple what would suffice for them in health. Thus, in one case noticed at the Lourcine, a girl, aged eighteen, with cutaneous and mucous syphilitic eruptions, had well-marked boulimia, coincident with febrile symptoms, which at first were intermittent and then continuous, with profound prostration, algidity of the extremities, and pains in the limbs, with sleeplessness and profuse sweating. At the same time, she had palpitation of the heart, irregularity of the pulse, with gastralgia, nausea, headache, and analgesia: the temperature in the axilla was sometimes as high as 39·8 C. There does not seem to be any special treatment beneficial in such cases, and Dr. Fournier looks on the phenomenon as a nervous affection. Many persons are sceptical as to these boulimic cases, but I have at present one under my care.

Mention has been made on several occasions of fever occurring during the secondary period of syphilis; but Dr. Fournier has written also on the subject of syphilitic fever. According to him, secondary syphilis attacks not only the skin and mucous membrane, but also the muscles, bones, the sero-fibrous, the central, and peripheric nervous systems, the membranes of the eye, the digestive organs, the circulatory organs, the uterus, and the embryo it contains. Syphilis is often complicated by a febrile state, which is observed either concurrently with an eruption, or apart

from any eruption. Syphilitic fever did not escape unnoticed by the first observers of the 'new and unknown disease,' although Nicholas Léonicènus and Gaspard Torella, writing in 1497, speak of syphilis as apyrectic. Jean de Vigo (1514) speaks of a *petite fièvre* in syphilis, which being sometimes superadded to the other symptoms, insensibly conducted the patients to emaciation and death. Yvaren speaks of intermittent fever caused by the poison ('Metam. de la Syph.,' p. 173). John Hunter ('Treatise on Ven. Dis.,' p. 530) says that fever, insomnia, and headache are common in the secondary period of syphilis. The fever is described as at first resembling rheumatic, and then hectic fever. Swediaur ('Traité de Mal. Ven.') speaks of authors who have described intermittent syphilitic fever. Guntz ('Schmidt's Jahrb. f. gesam. Med. t. C. xx.') speaks of the precursory fever of the second period, and shows by thermometrical observations that it is continuous and remittent.

The syphilitic fever of the secondary period commences frequently by headache, or sensation of cold, shivering, etc. The pulse becomes raised, and there is malaise. Disorders of the digestive organs are common in ordinary fevers, and the appetite falls off; but in syphilitic fever the tongue remains clean, the appetite is rarely lessened, and often becomes ravenous, as before remarked. The repetition of shivering fits, with local or general sweats, are frequent in the course of the fever; headache, periosteal pains, myalgia, and neuralgia, with algidity of the surface of the body, and loss of sensibility to heat, pain, and common sensation, are frequently met with. The fever is irregular in its evolution, and inconstant in its duration. Fournier remarks that syphilitic fever is observed in three forms, intermittent, remittent, and capricious. The intermittent form is the commonest, and sometimes simulates to a great degree paludal fever in its regularity, recurring usually once (nightly) every twenty-four hours. The attacks exhibit shivering, heat, and sweating, and usually appear in the evening; and the three stages take about twelve hours to be completed. Insomnia, malaise, and weariness, with great thirst, accompany these attacks. The spleen is not enlarged, but in other respects the attack might easily be taken for one of paludal intermittent fever. Quinine is useless in such cases. Intermittent syphilitic fever is almost always of quotidian type, vesperine, or nocturnal. In the second form of syphilitic fever, that which is continuous with exacer-

bations, the attacks come on irregularly, and the duration of the attacks is very variable. The form is less common than the intermittent form, and is often accompanied by great asthenia, torpor, and even stupor, so as occasionally to simulate typhoid fever. Fournier has given it a name, *typhose syphilitique.*

The author has quite recently had a lady under his care with similar symptoms of syphilitic fever. The pulse may rise to 136, and the temperature be as high as 103° F. It is seen in its intensity almost solely in women. Besides these two forms of syphilitic fever, there is a third, in which it is very difficult to define the character of the febrile attack. The fever may be at first intermittent, and afterwards continuous, to return again to the intermittent form. In some cases of secondary syphilis in women, there is true cerebral asthenia. The patients complain of inability to read, work, or make any intellectual effort. Guntz, in his memoir, says that the fever usually appears about sixty-five days after the patient has contracted the original contagion; but the fever may occur at very various epochs in the history of the disease, although it is far more rarely seen as the disease gets older. Fever occurs, according to A. Fournier, in one-third of the cases of syphilis entering the wards of the Hôpital de Lourcine. The termination appears to be uniformly favourable, and no cases of death from syphilitic fever are on record. Mercury and iodide of potassium are the two remedies which, according to A. Fournier, we must employ in its treatment.

As to diagnosis, it is distinguished from marsh fever partly by the non-efficacity of quinine, and partly by the fact that the attacks are not quite so regular in syphilitic fever as in paludal fever. It may, in some instances, be readily mistaken for commencing tuberculosis; and the author has noticed some cases in which this mistake has been made. Typhoid fever is distinguished from syphilitic fever by the dryness and sordes of the tongue and teeth, the delirium, inappetence, gurgling in the iliac fossa, and râles in the thorax. The fever is often seen in persons who have undergone a mercurial treatment, and M. Diday ('Histoire Nat. de la Syph.') considers that iron and iodine are the only two fit remedies for this symptom. A. Fournier gives mercury, in combination with iodide of potassium, in fevers of the secondary period, and sometimes iodine alone; he thinks that mercury is less efficacious in such fevers than in other diseases of that period.

In a clinical lecture listened to by the author, in August, 1871, at the Lourcine Hospital, Dr. A. Fournier insisted upon the way in which secondary syphilis acts upon all the functions of the body, and not only upon the skin and mucous membranes. First of all, the nervous system is often greatly affected, in women especially. Hemiplegia and paralyses of the face and motores oculi are far from rare in the secondary epoch. Hysterical and epileptic women have their attacks increased when poisoned by syphilis, which, indeed, often gives rise of itself to both of these diseases. As to algidity of the extremities, Ulrich von Hutten remarked this effect of the disease, in his own person, in the sixteenth century; the hand is sometimes 'as cold as ice.' With regard to the function of respiration, it is not often affected in secondary syphilis; but some patients complain of dyspnœa. As to the circulatory system, palpitation of the heart is often observed, and great irregularity of the pulse during secondary eruptions, as is well shown by sphygmographic diagrams. The nutrition is affected in very many cases. Colic and diarrhœa are very common. The diarrhœa often resists all ordinary astringent remedies, and yields only to specific treatment. Jaundice is sometimes seen. Loss of weight is common, and, in tertiary cases, marasmus sometimes supervenes.

On the uterine functions we find that syphilis acts by causing very frequent amenorrhœa in the secondary period, which lasts for months, making some patients suppose themselves pregnant when that is not the case. Depaul speaks of the disease causing sterility; but the experience of the Lourcine Hospital is opposed to this. Syphilis, however, causes abortions, and dead or premature births, very frequently indeed in the secondary period; and a student in the Lourcine found that, of five pregnant women entering that hospital with secondary eruptions, four aborted or had premature labours. Dr. Fournier mentioned a case where a woman had seven pregnancies followed by syphilitic children. In all cases where women abort frequently, both parents (says Fournier) should be examined carefully, and mercury or iodide of potassium given for some lengthened period, when they will probably have healthy children in very many instances.

The forms of skin disease seen in the secondary period of syphilis are very various. Willan and Bateman were not able to separate syphilitic skin diseases into a separate

class. It was a physician of the Hôpital Saint Louis, Biett, who first described and clearly classified the *syphilides*, as he named syphilitic eruptions of the skin.

One peculiarity of syphilitic skin diseases is that they are apt to appear in a great variety of forms. The colour has been likened to that of the lean of ham, or to copper. They are frequently circular in form, or semi-circular, especially when of late appearance. These eruptions are scarcely ever known to itch. When crusts succeed to ulceration, they are usually greenish in hue, and in cases where scars occur after the greyish and abrupt-edged ulcers of syphilitic skin affections, the centre of the scar is as deep as the loss of substance, and the scar is wrinkled. Syphilides may occur on any part of the body, but the papular syphilide is found most frequently on the back of the neck, roseola most frequently in the internal aspect than the external of the limbs and trunk; psoriasis is chiefly seen on the hands and feet, and superficial pustular syphilides are chiefly seen in the hairy scalp. Mucous plates of the skin are met with chiefly at the orifices of the mucous membranes, or wherever any friction is habitually met with. The earlier syphilides coincide with the enlargement of the inguinal and cervical glands, with the mucous plates seen at the vulva, the mouth, etc., whilst late syphilides occur with pains in the bones, exostoses, and gummy tumours. Syphilides are divisible into exanthems, papules, superficial pustular, varioliform and warty, when they are in the early period of the disease. *Roseola*, or erythematous syphilis, is one of the most common forms of early skin eruption seen. It consists of spots of dark rose colour, disappearing on pressure, and scarcely raised above the surface. This eruption is seen on the trunk and inner aspect of the forearms for the most part, and some say that palmar psoriasis is only a variety of roseola. It may last for several months. Some authors allege that roseola is a constant feature of all cases of syphilis; but this appears to be an exaggeration. It appears at from three to six weeks after the hard sore, on the chest, abdomen, thighs, and forearms. It consists of spots of rounded shape, not raised above the skin, and varying in size from a lentil to a shilling. At first the colour is rosy, but afterwards it is brown, or even gray, so as to resemble spots of dirt. These spots may be confluent or discrete, and there is no itching or pain. If there be itching, the eruption is probably accompanied by scabies. It is

usually easily enough distinguished, because generally accompanied by other symptoms of syphilis, such as the hard sore or mucous tubercles. It is unlike roseola, since the latter is pyrectic, and accompanied by itching. It is distinguished from measles by the want of fever, but is not always so easily distinguished from the mottling of the skin produced by cold.

The papular form of syphilitic eruption is also very commonly met with. The papules present a reddish hue, resembling the rose spots of typhoid fever, and are frequently seen on the forehead in the eruption called corona veneris. It is characterised by small spots, round, flattened, of the size and volume of a lentil, slightly raised above the surface. At first the colour is rosy, but subsequently it resembles the lean of ham. These spots desquamate slightly. It is seen principally on the back of the neck, on the chest, thighs, and arms. It lasts from three to six weeks as a rule. When it is in its decline, this form of syphilitic skin eruption is apt to resemble purpura. It has been described as appearing under two forms—lenticular and flat papules. The latter form may show spots as large as a sixpence, red at first, then brown, and finally copper-coloured. These appear especially on the forehead. A variety named horny has been described as occurring on the palms of the hands. The hardness is due to the thickness of the epidermis. This form tends to remain long without disappearing, and in some cases it is rather difficult to distinguish it from simple lichen, even although lichen *is* itchy. The *superficial pustular* form of syphilitic eruption is frequent on the scalp, with alopecia of the scalp, and is also seen on the face and the trunk. The superficial pustular syphilide is rarely seen alone, but accompanies roseola, or papular eruptions. It is characterised by small superficial pustules without any induration of base, leaving a small crust, like that of simple impetigo, and surrounded by a brown border. It is not the cause of the enlargement of the posterior cervical glands, which are so often enlarged in syphilis. The pustule is very ephemeral, so that we merely speak of 'crusts in the hair' in syphilis.

Variola-like eruptions, the most common kind of syphilitic vesicular eruptions, are rare. They are characterised by red stains, forming a projection above the surface as large as a pea, and surrounded by a red base. The vesicle is filled with a transparent fluid which rapidly becomes opaque, and

ends in the syphilitic colorations, and in a crust which adheres and is coloured greenish brown. This eruption may last for two months, and come out in crops. At its commencement, it may easily be mistaken for varioloid; but the slowness of the eruption and co-existence of other symptoms of syphilis soon clear up the diagnosis.

Under the head of *vegetating syphilides* are described granular syphilide, excrescences, and mucous tubercles. The last we shall speak of by-and-by. *Granular* syphilides are rare, and are seen in the naso-labial furrow in the form of warty projections, of a greyish colour or copper hue, sometimes circular in shape. *Excrescences* or *warts* are not clearly syphilitic, and are seen at the anus, the vagina, or the crural folds. They are best treated by chromic acid, or acid nitrate of mercury.

Squamous affections, or syphilitic psoriasis, are common enough, and are not unfrequently mistaken, as the author has witnessed more than once, for lepra vulgaris, or *vice versâ*, by able practitioners. Syphilitic psoriasis is found in the form of drops of copper colour, covered with fine white scales, on the trunk or upper extremities; also in the circinated form, commonly on the face, or on the palms of the hands, or soles of the feet; in which latter case it is made up of rounded spots of copper colour, covered with hard scales, which sometimes form cracks and fissures complained of by the patients. To distinguish this from ordinary psoriasis is sometimes no easy task; but the thickness and imbrication of the crusts, and their seat on the elbows and knees, may often aid us in coming to a just conclusion. Herpes circinatus much resembles the squamous syphilides in many cases, and is distinguished by its centrifugal hardness, due to its situation. Palmar and plantar syphilides are often squamous in character. The character of these eruptions is that of somewhat projecting patches, of copper hue, covered with hard and greyish squames: sometimes these are confluent, and form plates extending from the hand to the wrist. These plates become cracked, and form very painful and ragged fissures. There is a reddish-brown border around the fissures. Such remain sometimes for years, and then are unaffected by internal remedies. They much resemble simple palmar psoriasis; but in the case of the simple variety we probably will find other affections on the knees and elbows.

Hardy describes certain intermediate eruptions as occur-

ring from six months to one or two years after the primary sore. He divides these into pigmentary, vesicular, pustular, squamous, and tubercular syphilitic eruptions. The *pigmentary syphilitic* eruption is one which often deceives the novice in clinical syphilis. It often comes on, when roseola is disappearing, in the form of rounded, non-prominent spots, with a coffee and milk colour, sometimes covering the whole of the front of the leg or other regions, and being easily mistaken by the unwary for the parasitic affection called chloasma. The pigmentary syphilide comes on between four months and a year after the hard sore, and in London has been so little remarked, that when I described it in 1879 as of very frequent occurrence in syphilitic females, no other member of the Medical Society of London had noticed it. It is characterised by stains of brownish colour, without desquamation, of the size of a sixpence or shilling, which stains often are united by their borders, but leave spots of white between them. Hardy, of Paris, who first described this syphilide, calls it ephelis. I have seen these eruptions on the necks of the young syphilitic women at the Rescue Society's Hospital in probably one third of the cases. It is also seen on the trunk, on the face, and on the abdomen. It is almost solely confined to women.

Alopecia, according to Fracastor, writing in 1546, was often considered to be caused by the remedies, such as mercury, used for the disease; but it was soon seen that this was one of the natural consequences of the disease, in perhaps five-sixths of the cases of syphilis that come before us. Women suffer more frequently from loss of hair in syphilis than men do. The hair becomes very dry, and, as shown by Mr. Erasmus Wilson, there is a change in its whole structure observable. This alopecia may last for several months, but when the strength returns, the hair becomes generally as strong as before, in this showing the resemblance between syphilis and several of the acute exanthematic fevers. The author considers that alopecia in syphilis is caused by the want of nutrition, which is the effect of the disease, not by the existence of any particular eruption on the scalp, as some would have it. It is remarkable how total sometimes the loss of the hair is, especially in women. In one case observed by the author the eyebrows came off, along with almost complete baldness of the scalp and fall of the hair from the axillæ and pubes. In the course of two years, however, the lady regained her hair

in as great luxuriance as before. The *matrix of the nail* is sometimes attacked by mucous tubercles and syphilitic eruption. *Vesicular* syphilides are rare. We have described the early form, or varioliform. Sometimes there are a few vesicles in groups which may form a crust and thus resemble eczema, at other times the vesicles may take on the form of herpes, but in this case the base is copper-coloured.

In the intermediate group there is also a *pustular* form of syphilide, which may resemble acne, or ecthyma. In the acne-like variety the pustules are of the size of a grain of millet, surrounded by a coppery areola. In two or three weeks a crust is formed, which may be followed by a small rounded scar. It is seen on the face or legs. Common acne is prevalent on the shoulders. Ecthymatous syphilides are severer than the last named variety. They have for character red patches, on which arise pustules sometimes as large as a sixpence or a shilling, containing a yellowish pus sometimes mixed with blood. The pustule is surrounded by a dark red areola. The rupture of the pustules causes the formation of greenish-brown crusts, with a superficial ulceration beneath, which leave scars. This form of 'malignant syphilis' has been sometimes taken for small-pox.

The mucous membranes are, in most cases of syphilis, sure to be attacked by what some persons call generally *mucous tubercles*—a name which has been strongly objected to recently by Fournier and some French writers as unscientific. In the throat we find, in cases of syphilis in its early stages, a uniform redness on the velum palati, tonsils, and pillars of the fauces; often, too, on the posterior wall of the pharynx and the interior of the larynx, but not proceeding lower than this level in the gullet at any rate. The mucous membrane of the nostrils sometimes also, but rarely, is reddened as if there were ordinary coryza. This erythema has been often seen by the laryngoscope in the larynx, in company with whitish raised patches. In such cases the voice is hoarse, but the affection is not of long duration and is easily cured. Small ulcerations are commonly met with on the surface of the tongue, on the fauces, on the nostrils and sides of the lips, and on the internal aspect of the lips. They are very superficial, but return again and again for years with annoying persistence. There are also certain appearances which are only seen in syphilis. These are characterised by elevated patches of the skin or mucous membrane, circumscribed and more or less whitish in

colour, or rose-white. These are developed sometimes on healthy surfaces, or are said to take the place of chancres in the female sex. On the skin, these *patches* are covered with a transparent crust, and surrounded by a swelling. On the mucous membrane the patches are little prominent. The vulva, the anus, the upper part of the thighs, the tonsils, mouth, lips, and spaces between the fingers and toes, the nipples, groins, and ears are most frequently affected. On the scrotum the merest patches are often met with. In the mouth they are at first of a violet hue, and then fissures of the tongue often ensue. They are whitish on the velum palati, and are found on the true and false vocal cords in perhaps one in eight cases of hoarseness occurring at this period of syphilis.

Such appearances are seen at the edges of the nostrils and mouth for years. The author cannot share the optimism of Bassereau, who considers such appearances as evidence that syphilis is likely not to be grave in after years. Some of the worst cases of tertiary syphilis he has seen have occurred when patches of this kind have been common. As to vegetations, or warts, these are no proof of the existence of syphilis, as they occur in persons who have never suffered either from gonorrhœa or syphilis. All such ulcers and patches, on whatever part of the body they are situated, are full of contagious secretions, and as they relapse for many years, it is difficult to say when a person affected with syphilis leaves off being a focus of contagion. In syphilitic women with leucorrhœa the contagion may seemingly last a quite indefinite period. Probably, however, in the course of some six or seven years contagion rarely exists, or, indeed, in most cases is over in three years. There is another form of syphilide seen in the intermediate period of secondary eruptions. This is the *tubercular*, which is divided into two varieties, disseminated, and in groups. The disseminated form is merely a papular syphilide exaggerated, appearing later than the papular. It is characterised by round or oval tumours of the size of a pea, glistening, at first as a dark red, and then of a copper colour. They eventually become covered with scales, and gradually become effaced, without ulceration, although sometimes a smooth cicatrix is left in the spot where they were present.

The variety of tubercular eruption which occurs in groups comes on a year or two after the hard sore, or even later.

Most generally the tubercles are grouped in a regular way, and form circles or segments of circles. These tubercles, which are hard and resistant, are often covered with a dry greyish scale. They frequently leave a superficial cicatrix, and their usual place is above all on the face, or on the forehead, around the nose, or on the lips; they are also seen on the upper and lower extremities. At first their colour is red, but afterwards they present the ham colour. Although they rarely ulcerate, they frequently leave ugly looking marks on the skin. But they do occasionally ulcerate, and then leave very bad scars. There is usually but little difficulty in separating this form of syphilide from scrofula. Scrofulous eruption is more violet coloured, and is accompanied by swelling of the subcutaneous cellular tissue.

The glands which swell at this period of syphilis are the inguinal, posterior cervical, the mastoid, submaxillary, axillary, and popliteal. There is sometimes, although not always, some local lesion in the vicinity, which accounts for this swelling. In children, and even in adults, these swellings remain permanent for years. H. Lee speaks of *amygdaloid* glands in the groin as being a sign that the patient cannot again contract syphilis for the time. Does jaundice ever arise from syphilis? The author believes that it occasionally does. In children the joints are sometimes much swollen in this period of the disease, and although this is rarer in adults, cases of the kind do occur. The superficial bones, such as the tibia and the ulna, not unfrequently suffer from periostitis, which causes great pain, especially at night-time, and the testicles are apt to become inflamed, just as they are in gonorrhœa, in some rare cases, at this period. The author has seen, in one or two cases, hemiplegic seizures arise in the midst of the eruptive period of syphilis. A well-marked case of this kind came under his notice in 1869 at the Metropolitan Free Hospital. A man, suffering from corona veneris and papular eruption over the trunk and upper extremities, was brought into the hospital speechless and with hemiplegia of the right side. He continued hemiplegic and nearly aphasic up to 1870. In the post-mortem observation on a similar case, related by Dr. Kuh, infiltration of the convexity of the brain with yellow exudation was found, and a similar diagnosis was made in this case.

Syphilitic iritis is one of the most frequent forms of syphilitic affection observed in the eruptive period of the disease.

In a prolonged attendance on the Royal Moorfields Ophthalmic Hospital, the author has had ample opportunity to study this disease. Some writers say that there are two varieties of syphilitic iritis—superficial and deep-seated. When syphilitic iritis is of its ordinary type, the eye is red from congestion, the iris dull, then of a dusky hue, with occasionally small elevations on its surface. The pupil is uneven, and more or less altered in form—triangular, or shaped like a shamrock; the iris sometimes assumes a yellowish rusty hue. In some cases there is adhesion of the posterior part of the iris to the lens. Such iritis is apt to recur year after year, and often, in this way, to cause irremediable damage to vision. The pain is slight at first; afterwards, it is severe around the orbit. Intolerance of light is uncommon. It is rare that both eyes are attacked at once, but not rare to see one affected after the other. It lasts a long time; and although when carefully treated by iodides and locally by atropine (gr. iv. ad ʒj.) the result is often good, it must be said that the prognosis of syphilitic iritis is far from being usually a good one. This form of iritis has not uncommonly been met with by the author in syphilitic children, and has been recognised by the irregularity of the pupil and the presence of dimness of the cornea and of tubercles on the iris.

In not a few cases the inflammation of syphilitic iritis extends to the choroid and retina, and causes destruction of the eye. Besides which, syphilitic *corneitis* is sometimes seen to follow or precede this affection, and this complication of syphilitic iritis frequently causes permanent imperfection of vision. Since the use of the ophthalmoscope has become generalised, the existence of choroiditis of syphilitic origin has been ascertained. The patient complains of muscæ and dimness of vision, and the ophthalmoscope reveals long sinuous veins, with hazy vitreous, showing the optic nerve as if in a fog. There are patches of exudation seen on the choroid. The prognosis, if iodide of potassium is used, is not very bad. In syphilitic *retinitis* the optic nerve has an ill-defined outline, and is surrounded by a dirty-greenish zone. There is photophobia. By means of the ophthalmoscope the vessels of the retina are found injected, and the veins are much dilated in some cases, and obliterated in others. Another form of affection, somewhat rare, in the syphilitic eruptive period, is mydriasis. The author has only observed some three or four examples of this. Mr. De

Méric has published a small pamphlet on the subject, and it is well that all physicians should be aware that syphilis is sometimes a cause of this affection, as it is by no means incurable in such cases, if Calabar bean be used and iodide of potassium freely administered.

Lancereaux and some others place rupia among the affections peculiar to the period of gummy products. The author is of opinion that rupia should rather be placed among the eruptions of the early period of syphilis. In several cases he has seen rupia of a formidable character (and in one private case, seen in company with Mr. Robert W. Dunn some years ago, acute rupia proved fatal) occur within a year of infection. Impetigo, ecthyma, and rupia are the three forms of the rupial division of syphilitic eruptions, and form what is called *malignant syphilis*. In all of the three a red spot is first seen, on which pustules arise. These burst, and a greenish crust forms over an irregular ulcer, with small-sized granulations, and surrounded by a red circle. Rupia is *most* frequent on the lower extremities, but may extend over the whole body. There is usually a profound state of cachexia in such cases, and the author has remarked that several cases of visceral syphilis which have proved fatal have been preceded by eruptions of rupia. Fortunately, malignant syphilis is comparatively rare at the present day. We occasionally witness in the eruptive period small tumours of a dusky red colour, which occupy the whole thickness of the skin, and which soften and give rise to phagedænic ulcers. In addition to these, we have the tuberculo-ulcerative cases, which are seen chiefly on the face, especially on the nose and lips, and which are characterised by hard, bright red pimples of coppery colour, and which are serpiginous. When these heal, they leave ugly and indelible scars. The most formidable of all these affections is the tuberculo-ulcerative affection, described first by Rayer, which is said by him to commence with a crop of red, hard, smooth, indolent tubercles, which soften after a time and ulcerate, the ulcer being covered by a thick uneven crust, blackish-green in colour. The ulcer tends to extend in surface rather than in depth, and leaves dead white scars, with bridles and depressions. In some cases the ulcer extends deeply, and destroys the nose and adjacent parts very rapidly. There is some difficulty in distinguishing cases like the latter from epithelioma or struma, but the scars of struma are rosy blue, and in cancer the ulceration has round granulations and whitish edges, the

floor of cancerous ulcers is often sanious, and never covered with crusts. The author has over and over again seen such cases taken for struma by persons of experience, but become rapidly cured when large doses of iodide of potassium—*i. e.*, a scruple thrice daily—were administered to clear up the diagnosis.

Onyxis, an affection of the toe-nail, is found both in the eruptive period and later on in syphilis. It is also found in the nails of the fingers. An ulcer commences at some part of the lunula or root of the nail, and the toe becomes swollen and of a deep brick red. The nail often falls, and, when the case is neglected, the phalanx may be found to have become carious or necrosed, and to require removal. If constitutional treatment be adopted, however, this result is indeed uncommon. Iodide of potassium, not mercury, should be used in such cases freely.

CHAPTER VII.

ON TERTIARY SYPHILIS.

WITH these remarks about the earlier periods of syphilis, I at once pass on to the consideration of that epoch of the disease which constitutes the great and paramount importance of that modern pestilence which is doing so much to embitter the existence of our race. Until recently, tertiary syphilis was but ill understood; nor did John Hunter seem to be aware that the poison might cause these lesions of the brain, liver, kidneys, or nervous system which are now so patent to all of us as being sometimes consequences of syphilis. We find in the tertiary period all the great lesions of syphilis, those lesions which ulcerate the skin, and even attack the viscera; lesions which put an end to life: and by the term tertiary syphilis I mean that group of manifestations which take place a long time after the primary lesion, which are rarely hereditary, and are almost never contagious, like the lesions of the secondary stage.

It is impossible to say when the period of *gummy tumours* arises in syphilitic infection. The author has witnessed enlargements of the testes within a year after the virus was absorbed, and has also seen fresh nodes occur at least twenty years after the onset of the disease. To make distinct periods in syphilis, therefore, is apt to confuse the student. It is better to be always prepared for almost any symptom in a person who has absorbed the poison, and, above all, not be too certain in our prognosis. As is now well known, in many persons the whole of the disease consists in a few eruptions, and then all is over. The patient's health seems quite as good after as before the insertion of the virus.

A certain per-centage of cases of syphilis (shall we say, about seven?) are destined, however, to be severe and life-long in duration, and in them we have to look for the con-

stantly recurring phenomena of gummy tumours. The name of 'gumma,' or gummy tumour, is as yet hardly known in the English literature of the disease. It seems to be due to Gabriel Fallopius, who, in 1564, says that, 'after the pains, or simultaneously, tumours arise near the joints, in the middle of the fibula, or the ulnæ, or on the head. These tumours, when they contain a thick material, like mucilage, are called on this account *gummata* by physicians.' Virchow, in his treatise on Constitutional Syphilis, gives a good account of the nature of these tumours. They arise in the subcutaneous cellular tissue, are from the size of a pea to that of an egg, greyish or yellowish in tint, and sometimes soft or glue-like, but more generally firm in texture. Looked at under a good microscope, these tumours are often seen to be collections of small rounded corpuscles, with some elongated cells. Like tubercles, these tumours rapidly break down, and are painless. The skin becomes implicated and perforated, and an ulcer is left, which on healing leaves the superficial or deep scar of syphilitic appearance. The upper and lower extremities are most frequently attacked, then the head, and the chest and clavicles are sometimes invaded. Constant errors in diagnosis are made by inexperienced persons in such cases, since these gummata much resemble boils in some cases, or strumous ulcers, etc. It is important to make the diagnosis early, as the iodide of potassium is almost a certain cure in most of such cases, and, if not given, the damage caused may be frightful and irreparable. Such tumours may, for instance, occur in the glands, and occasionally, though rarely, occupy the mammary gland, giving rise to the idea of cancer in the organ. In cases of obscure ulceration of the breast, the history should be well inquired into on this account, and iodide of potassium tried, if there is the slightest doubt, before proceeding to operate. The author was consulted in one case in which this caution proved most useful.

Causation of Tertiary Syphilis.—As a general rule it may be said that syphilis may possibly arrive at the tertiary period; but all cases of syphilis do not exhibit tertiaries. It would then be of the greatest importance if there could be laid down some prognosis as to what cases are likely to escape them. It has been asserted by Dr. Diday that when the secondary eruption is mild and the induration of the primary lesions slight, we may expect that tertiary lesions will not appear, or be benignant in character. 'Tertiary

syphilis (according to Diday) ought not to be considered as one of the periods of the disease. It is a pathological condition, distinct in itself, the treatment of which and its clinical characters differentiate it sufficiently from the secondary stage. Its appearance is not due to any excess in duration of the secondary period, for a given case of syphilis may persist for three or four years in the form of secondary lesions, without, on that account, passing into the tertiary stage.'

As to Dr. Diday's remark, that cases where induration of the primary lesion was slight or the secondary eruption ill-marked are likely to have no tertiary stage, my own experience has taught me to regard this as a rather misleading and faulty induction from experience. Some of the worst and most fatal cases of brain disease I have witnessed, or of ulceration of the soft parts, have supervened after extremely mild secondary eruptions. Indeed, so much is this the case, that some authors, as Dr. Broadbent, have been found to adopt the opposite belief, and to assert that it is precisely these cases of primary sore which are least well-marked, and scarcely followed by any visible secondary eruption, that give serious examples of tertiaries. This view I can neither confirm nor reject.

There are, however, some circumstances which I believe do render the prognosis of syphilis in its early periods more grave, as to the occurrence of the tertiary stage. Among these I would enumerate, first of all, old age, then scrofula or consumptive tendencies, then drunkenness, bad living, and other lowering agencies. Numerous examples of these being antecedents of tertiary syphilis occur to my mind; and the question of sex, also, is not by any means to be left out of account, since my experience shows me that women suffer much more from tertiary syphilis than men. And, yet, granting all these as predisposing causes, who is there who has not met with grave and even fatal cases of tertiary syphilis among persons whose constitutions and general health left nothing to be desired?

We cannot prevent scrofula; old age is beyond all remedy; and the evil effects already produced by alcoholic poisoning are beyond our control: but there is another point worthy of all consideration, in the question of the causation of tertiary syphilis—I refer to the treatment made use of in the earlier stages. I will narrow the matter still further, by putting the following categorical question: Does the ad-

ministration or non-administration of courses of mercury have any effect on the non-appearance of the tertiary stage?

To this very important question the replies have been most different. Dr. Diday, in his 'Histoire Naturelle de la Syphilis,' note v., p. 271, asks whether the appearance of tertiary lesions is due to the absence of specific treatment, and says: 'No again; independent observation teaches us that tertiary syphilis comes on just as frequently after the omission as after the employment of specifics during the secondary period.'

Another opinion, held with tenacity by the late illustrious gentlemen, Mr. Syme and Dr. Hughes Bennett, is, that the chief cause of the occurrence of tertiary lesions is the administration of large doses of mercury in persons already poisoned and weakened by the virus of syphilis; and I confess to have held this view in a modified form for some years, until convinced by experience that tertiary syphilis comes on when all mercury is abandoned, and that frequently enough. I am not aware that any very distinct statement in this direction has been made in this country of late years, although it used formerly to be held by many practitioners of experience that the *main cause* of tertiary lesions is the omission of courses of mercury from the earlier periods of the disease.

Dr. Ricord and his illustrious pupil, Dr. Alfred Fournier, have recently been very firm in the position they have assumed as champions of prolonged courses of mercury, in *every case* of true syphilis, whether mild or not, commencing from the period of the indurated sore, as being the grand means of warding off tertiary syphilis altogether. M. Ricord, in his well-known address, delivered a few years ago at the request of the late Mr. Acton, in the summer meeting of the British Medical Association at Birmingham, said that he gave invariably a six-months' course of small daily doses of mercury to *all* his syphilitic patients, following this up by another six-months' course of the iodide of potassium. If his patients would not carry out this prescription in its entirety, he bade them seek another adviser.

Dr. Alfred Fournier asserts that 'the true cause of the passage of syphilis into the tertiary stage is doubtless the absence or insufficiency of treatment. Whatever certain authors have affirmed, syphilis, when neglected, has every chance of arriving at the tertiary period; and, according to daily experience, the consequences of expectation applied to

syphilis are truly disastrous.' ('Lectures on Tertiary Syphilis,' *La France Médicale*, May 23, 1874.) In a former series of lectures I listened to in 1871, Dr. Fournier said: 'The most simple prudence obliges us to keep ourselves on guard in all cases to advise a treatment sufficient to attenuate, if possible, the effects of the diathesis in the present and for the future. . . . My intelligence refuses obstinately to comprehend how a remedy can moderate all the effects of a poison and pursue this poison through all the organs where it pleases itself to hide, can cure even successive manifestations and discrete symptoms of the diathesis, without in any part finding itself in relation and in conflict with the principle of the diathesis, and with the organic cause of these symptoms. Ninety-five cases, in one hundred of my notes, show me that syphilis, when treated, is usually benignant. Among syphilitic patients treated by mercury, not five per cent. are rudely attacked. . . . When not treated, syphilis is most dangerous, and we have too often to remark on our patients the evil effects of expectation in syphilis.' ('Leçons sur la Syphilis,' p. 1035.)

According to Fournier, mercury cures iritis, syphilitic psoriasis, and neuralgia, and *acts on the diathesis.* He alleges that syphilitic patients, when untreated by mercury, may have complete alopecia, loss of vision, and loss of the palate; whereas in patients carefully treated for many months (and he recommends intermitted courses of six weeks at a time during two years, giving ten months of small doses of mercury to all syphilitic patients as a prophylactic against tertiaries) there are only observed some superficial symptoms and slight alopecia. Relapses are slight, too, and rarely indeed do severe accidents show themselves; so that, if we count, we shall find how many more severe cases there are when mercury is not used. This was written in reply to the arguments of Dr. Després, who, in 1867, brought before the Société de Chirurgie of Paris long statistics of cases of tertiary syphilis, all of which had been treated by courses of mercury for their early stages by the first authorities in Paris. According to Dr. Fournier, mercury, in general, cures syphilis, but not always, any more than quinine always cures ague. It must not be supposed that Dr. Fournier's views as to the antidotal properties of mercury in syphilis have remained unchallenged, even in Paris. Thus, Dr. Lancereaux ('Traité de la Syphilis,' 1873), entirely denies that mercury has any power over the syphilitic diathesis,

or that it has any power in warding off, as Mr. Jonathan Hutchinson alleges, the secondary or eruptive stage when given during the hard sore, or of preventing the occurrence of tertiaries when given during the period of secondary eruptions. He remarks that it is surely bad enough for a poor patient to have contracted syphilis, without this causing him to be henceforward for years, or indefinitely, liable to a continuous treatment by means of a remedy which is, after all, a very poisonous remedy, and which should only be used for short periods, and most cautiously. In page 554 he says: 'The reasoning on which my mode of acting rests is as follows: A great number of syphilitic persons, even if they take no mercury, have no other symptom but roseola and hard sore, provided they are careful in diet and regimen. This disease, just as pneumonia formerly was, is only subjected to a uniform treatment because practitioners have ignored its natural history.' He then points out that, in other diseases, remedies only act on symptoms, not on the disease. 'From this discussion,' he adds, 'I conclude, that if no serious reason be seen for continuing mercurial courses after the disappearance of the eruption or other symptom, there is no use of prolonging the remedy, since clinical experience and the analogies of other diseases show us that diet and regimen can, far more than drugs, prevent relapses, uproot the disease, and bring the constitution again to its primitive condition.' My own prolonged experience of the treatment of syphilis without mercury soon led me to see clearly two or three points. First of all, I learnt that tertiary symptoms may arise quite without any mercury. This is now so well made out that I think it may be said to be believed by almost every practitioner in Europe, with the exception, perhaps, of Dr. Hermann, of Vienna. But I also learnt before I abandoned mercury that persons treated carelessly by salivation and over-doses of mercury had sometimes extremely severe tertiary symptoms. One gentleman, in 1863, came to me with innumerable cicatrices over all parts of his body, caused by tertiary syphilis. He had taken long and severe courses of mercury for many years during his unfortunate career.

I have, furthermore, seen a great number of cases of secondary syphilis untreated get quite well, and no tertiaries appear after ten or eleven years. Thus, an elderly gentleman consulted me in 1863 for syphilitic roseola and

mucous patches, and was treated with iodide of potassium, and quite without mercury. The result was, that he remained quite well until 1873, when he again called on me, this time affected with a totally different disease, gonorrhœa, which—being in what Dr. Bertillon has so well shown to be the dangerous condition of widowerhood—he had contracted at the age of sixty-seven. He had had no more secondary symptoms since 1863, and not the slightest tertiary. Such cases are common enough in treatment without mercury. I have had many cases which might well justify the saying of Dr. Lancereaux, that 'clinical syphilis is a mild disease.' Yet, on listening to the lecture of my friend Dr. Fournier in 1871, I could not help feeling that, as he put it, this might be a matter of counting; and, as I had found syphilitic sarcocele, tertiary sore-throat, ozæna, and ulcers of the skin, occur frequently enough in my own non-mercurial treatment, I resolved to give the mercurial treatment a fair trial, and see whether it would prevent the dreaded tertiary stage.

Certain eruptions of the skin, *Tertiary Syphilides*, are most frequently met with far on in the disease. These rarely appear during the two first years of the disease, but may occur even twenty years after the hard sore. The first element in such eruptions is not often seen, for the patient comes with one or several greenish, uneven crusts, which cover a rather deep ulceration. These syphilides always leave very well-marked scars, sometimes causing great deformity. They occur at the same period as the other tertiary symptoms, such as exostosis, necrosis, gummy tumours, and deep ulcerations of the larynx and mouth.

The first form of tertiary syphilide is the *pustulo-crustaceous*, which has for its principal character a crust, covering a rather shallow ulceration. It may commence either by one pustule of ecthyma, or by many small vesicles, like those of impetigo, or by large bullæ, containing serum, blood, and pus. In the last variety we remark the eruption to commence in a considerable pustule, not much raised above the skin, a little wrinkled on the surface, and containing a brown liquid, mingled with pus and blood; the epidermis is easily broken, and a thick, greenish, hard crust forms, resembling a limpet shell. This is the 'rupia' of syphilitic literature. In rupia the crusts are dark green, conical, stratified, and surrounded by a copper-coloured areola. The crusts are very adherent, but, if removed by chance, a deep ulceration

is seen beneath, which may be of the size of a five-franc piece. When this lesion is advancing towards cure, we remark that the crusts become drier, and that they contract and fall, leaving behind a violet-red surface, on which there is seen a rounded and depressed cicatrix, at first copper-coloured, and then dull-white in colour.

There are ordinarily only a few of such scabs, perhaps half-a-dozen, on the body; but occasionally they are very numerous, and may even prove fatal. In cachectic patients, the eruption may last for years, or successive eruptions may occur for many years.

There is some difficulty in making the diagnosis between this syphilide and certain forms of scrofula of the skin. The scab of scrofula, however, is black, or white, in colour, not greenish, as in syphilide; scrofulous eruptions have their edges undermined and not sharply cut, and have not the pseudo-membrane on their floor, so peculiar to syphilis. Again, the scars in scrofulides are at first violet in colour, and then rosy. There is a good deal of gravity in the prognosis of severe cases of rupia, which is often accompanied by syphilitic cachexia, a condition which is not a very unfrequent cause of death.

There is another form of tertiary syphilide which has been named *ulcerated syphilide.* This is characterised by deep ulceration, with a tendency to extend, whatever have been its original form. It has two varieties, the first being superficial, and the second deep—*serpiginous* and *perforating.* The serpiginous variety may commence with a scab, and then extend in surface, or it may commence by red, hard, and smooth tubercles, rounded and painless, of the volume of a pea or a hazel nut. These soften, and the skin is perforated, and the place becomes covered with a greenish scab. New pustules keep forming, and end in new ulcers and scabs, whilst the old ones are scarring over. This form is generally seen around the joints, on the back, and occasionally on the face. It is very chronic, but usually easily enough cured for a time; but it may relapse.

This form has been taken for phagedenic chancre, and also for scrofula. The crusts in scrofula are, however, not of the same colour, and the pus is more liquid. As to chancre, the mammillated aspect of the ulceration, its position, and rapid progress, with the absence of all other syphilitic symptoms, with the inoculability of the pus, may make us distinguish the two easily enough in general.

The *perforating* variety of ulceration generally commences with tubercles on the face, nose, lips, or ears. It commences by two or three tubercles, which are pretty large, and sunk in the skin, the summits of which become red and soften, and a crust forms, which covers an ulceration, at first superficial. This ulcer shortly continues in its destructive progress, and destroys everything it meets with, cartilage, or bone. When the crust falls, a deep ulceration is seen, with fetid and sanious pus. There is but little pain felt throughout. This is often a most obstinate and intractable form of tertiary affection; but it is most frequently cured, leaving a deep and irregular scar. The ala nasi may be destroyed, or the bones of the nose, and this leaves often a marked deformity.

This form may be confounded with perforating scrofula of the face, or with cancer. Scrofulides have peculiarities as to the colour of the scab, the pus, and the areola which have been alluded to, and epithelioma commences by a warty growth, which has been a long time without ulcerating, and the ulcer presents projecting and everted edges. The scars, where any form, are more marked; and there are no concomitant symptoms of syphilis. This is the gravest of all the cutaneous forms of syphilis, by its depth, duration, and the ugly and indelible scars it leaves, and by the cachexia which sometimes accompanies it.

As to the *Diseases of Bone* occurring in syphilis, the most marked of all is that of *dry caries*, the worm-eaten bone of our museums, but it is comparatively rarely met with in this disease. Periostitis, or osteo-periostitis, is the most common, and gummy tumour of bone is much less frequently met with. In periostitis, the inflammation usually commences in the periosteum, and sometimes in the substance of the bone, and the Haversian canals are found dilated. The bone becomes denser; then nodes form on the periosteum, which sometimes disappear, but often suppurate, and the bone becomes carious. Such phenomena are often witnessed on the tibia, the fibula, the ulna, the clavicle, or any of the superficial bones, and especially on the cranium. Fortunately, since the days of iodide of potassium, such lesions are generally rapidly cured; before that time, however, when that over-praised drug, mercury, was alone used, bone disease was often quite incurable. The gummy tumours of bone are not nearly so frequent. They are, in rare cases, found in the substance of the bone, but more generally in the periosteum, and, when opened, a glue-like

fluid exudes. In fortunately exceptional cases, they may occupy the diploe of the skull, and cause necrosis of the part. This occurred extensively in the case of a gentleman who consulted the author some years ago, and who had been in the habit of reading all that was published on syphilis, and swallowing, *propria motu*, a large quantity of quicksilver in a fluid state for years. In many cases of syphilis of old standing, on putting the finger on the cranium, various points are easily perceived where the bone has disappeared from the softening of one of these gummata.

Dr. Wilks, Dr. Jenner, and others, have called particular attention to the occurrence of dry caries of the skull in syphilis. It is remarkable how few symptoms may be exhibited, even in cases where this kind of caries has caused the exterior table of the skull to present the appearance of a sieve. The author, in more than one instance, has seen this appearance in patients who during life had complained only of slight, though very persistent, headache. Such dry caries seems also to attack the bones of the nostrils in some cases, although periostitis is almost always the cause of the concomitant ozæna. Whilst one part of the bone is wasting away from caries, the neighbouring part is, in many instances, made thicker by deposit in its interstices. The author has not seen any case of softening of the bones (mollities) from syphilis. The pain in syphilitic affections of the bones is frequently nocturnal, and causes sleeplessness in many cases. When in the bones of the head, it may result from a node on the internal aspect of the skull. There is often great giddiness, with epileptiform seizures, and a feeling of tearing and horrible twisting of the parts is complained of. Loss of vision is sometimes caused by exostosis of the sphenoid bone. Dry caries of the skull is characterised in most cases by persistent headache, and by slight prominences which leave depressions.

Rheumatic exostoses are sometimes confounded with syphilitic, but are more irregular, multiple, and confined to the joints in most cases. Where treated with iodide of potassium and blisters, the syphilitic forms usually rapidly disappear, and end in resolution. Treated by much mercury, they are often gravely and rapidly aggravated, according to the author's experience.

The *cartilages of the larynx* are not unfrequently attacked by syphilis, and death is frequently the result of the narrowing of the air passage from the necrosis of some of the

cartilages. In the case of an elderly woman once under the care of the author, after death, which was postponed by tracheotomy, performed by Mr. Charles Smith of Brighton, complete destruction of the epiglottis was found to exist. In other cases, the aphonia is caused by the destruction of the vocal cords, and the necrosis of some of the cartilages, either of the trachea or larynx. The same thing has been observed by the author in cases of hereditary syphilis.

Syphilis comparatively rarely attacks the joints, but the author has seen it do so in women and in hereditary syphilis in children. Gummy tumours also sometimes occur in the muscles, and destroy a portion of the muscular tissue, thus causing shortening and deformity of the limb. It is chiefly in the forearm that such deposits in the muscles take place, but they may occur in almost any of the muscles of the body. Lisfranc mentions the occurrence of a large tumour in the tendo Achillis, which got well by the administration of iodide of potassium.

Syphilitic disease of the testicles is frequently witnessed, and is often followed by absence of spermatic filaments in the semen. Sometimes there is insterstitial deposit in the testes, which is characterised by tendinous looking bands, radiating from the tunica albuginea, and insinuating themselves between the seminiferous tubes, and thus compressing and separating them. The tubules become atrophied, and the testicle, hard at first, then degenerates and wastes. Almost all cases of chronic orchitis are syphilitic. Sometimes, in cases of syphilitic orchitis, we find tumours the size of a walnut, or egg, or small nut, deposited in the midst of the testes. They are almost dry on section, and contained in a whitish capsule. They are often composed entirely of cells and nuclei. Such, and all forms of syphilitic testicle, are rapidly cured by large doses of iodide of potassium. Mercury is quite out of place in such affections. We often find great difficulty in the diagnosis of tumours of the testicle; and have to guide us chiefly the fact that tuberculosis commences in the epididymis in the great majority of cases. Tubercle rapidly softens and forms abscess; syphilis very rarely does this. Cancer is a product of much vascularity, and not so likely to be taken for syphilis. Unlike the case of gonorrhœal orchitis, there is rarely any pain at the onset of syphilitic sarcocele, nor is there much tenderness on pressure. We remark a pear-shaped tumour, either smooth on the surface, or with irregularities. There is but

little hydrocele in general, and both testes usually become affected. In several cases examined by the author, there has remained a sterile condition as a result of this condition of the testes, and this in some cases has supervened but ten months after infection. This affection is very slow in passing through its stages, and, fortunately, if iodide of potassium be had recourse to in large doses at once, untoward consequences may in most cases be avoided. Even when cured for a time, we must be on our guard, as syphilitic sarcocele is apt to relapse after a time.

The author is inclined to believe that the analogue of the testis, the ovary, is frequently attacked by syphilis. Of course, this assertion is not easily proved or disproved, but a sufficient number of post-mortem observations have been given to show that syphilitic ovaritis is by no means very unfrequently the cause of sterility in prostitutes. Syphilitic disease of the neck of the uterus produces those never-ending discharges which are so common in women who have once been infected with syphilitic poison, and which so often infect men with syphilis.

All physicians who have paid attention to the subject of syphilis of late years are well aware that albuminuria of a fatal character is by no means rarely the effect of the poison of syphilis. Rayer, in his justly celebrated work entitled 'Traité des Maladies des Reins,' remarked that syphilis was a common cause of disease of those organs. One observer, Dr. Engel, has calculated that about one in three cases of chronic Bright's disease is due to syphilis. This is doubtless an exaggeration, but the author has seen many cases in which the cause of the disease was but too clearly the syphilitic virus. He is inclined to believe that, next to the brain and liver, the kidneys are perhaps, of all internal organs, most frequently attacked by syphilis. The post-mortem appearance of the kidneys in syphilitic albuminuria shows a smooth surface, with yellow points mottling it. Sometimes the surface presents rugosities, as in ordinary chronic nephritis. The morbid anatomy of syphilitic kidney may consist of diffuse inflammation of the cellular elements, leading to the destruction of the secreting cells and to fatty degeneration. This is one of the forms of chronic interstitial nephritis, resembling to a certain extent the gin-drinker's kidney, etc. In some cases we find gummata in the cortical part in the form of small tumours, of the dimensions of a pea, and yellowish white, which the microscope

shows to consist of cellular elements, at other times, there is amyloid degeneration.

In some cases, cicatrices in the kidneys are found, indicative of the former existence of such gummata. In the case of a man aged twenty-eight, who died some years ago under the observation of the author at the Metropolitan Free Hospital of London, with a history of infection of only ten months previously, there were rupial sores over the whole body, accompanied by cachexia, for which the patient had been treated by mercury for some time at Guy's Hospital. When first seen by the author, there was œdema of the ankles, as also large quantities of albumen in the urine, which showed in the microscope fatty degeneration of the renal epithelium, and some casts of the tubes. After death, interstitial nephritis was found, and a tumour the size of a small nut in the cortical part of the right kidney. The course of syphilitic Bright's disease is slow, and most commonly fatal, although in one or two cases the author has found a cure take place from the use of iodide of potassium for a long period. For instance, in a case of enlargement of the liver in a syphilitic patient, there was albuminuria for a short time, which disappeared as the liver gradually became smaller under large doses of that invaluable specific. In another case, a woman, mother of a syphilitic child, had albuminuria and anasarca on two or three different occasions, in the course of some five or six years that she was under the author's observation; but at length appeared to have become entirely free from albumen in the urine.

The most common, probably, of all the late symptoms of syphilis is deep *Ulceration of the Mouth and Pharynx.* Such ulcers attack the tonsils and pharynx, and rapidly destroy them in many instances, especially in women, who are often so careless about their health. The whole of the tissues become reduced to a mass of pulpy consistence, adhering to the floor of an unhealthy ulceration. The bones of the hard palate sometimes become exposed by such ulceration and necrosed. The palate is commonly attacked, but the pharynx and larynx very frequently are involved in the mischief, which may be sometimes truly deplorable. The author has seen one case of paralysis of the upper extremity, caused by the extension of the inflammation to the envelopes of the spinal cord in the cervical region. Iodide of potassium is such an admirable remedy in such cases, that such untoward terminations of syphilitic pharyngitis more rarely occur in

London at present than formerly; although sloughing of the throat is extremely common among the out-patients of the different large, and especially the free and throat, hospitals.

Tumours are found *in the tongue* in many cases, near the base especially, like hazel nuts. If not treated, these soften, and, bursting, leave abscesses in the organ, and cicatrices. They are not unfrequently mistaken for cancer when in the ulcerative stage, but the chronic progress of the syphilitic ulceration and the want of implication of the glands will clear up the diagnosis. Gummy tumours often form in, and rapidly perforate the velum and the hard palate. They should be *at once vigorously attacked* by large doses of iodide of potassium, and cauterised with nitric acid, or tincture of iodine, to save irreparable damage being done. The same treatment should be fearlessly applied to the ulcerations which often fill the pharynx with a mass of putrid detritus, preventing deglutition and destroying appetite. It is amazing how large the cicatrices in the pharynx sometimes are, and yet how the ulcerative process sometimes ceases spontaneously, never to return. Adhesions of the uvula to the posterior wall of the pharynx are not uncommon, and stricture of the œsophagus opposite the larynx has been met with by the author. Dr. West, of Dublin, has given some cases of syphilitic strictures of that canal, as also Dr. Morrell Mackenzie, in the Pathological Society of London Transactions for 1869. In one rare case mentioned by Dr. West, the stricture was two and a half inches in breadth at about four inches below the level of the epiglottis. A small sound, No. 4, could hardly be passed. The author has met with a similar case.

Virchow seems to refer some cases of *thickening of the stomach* to syphilis, and thickening of the stomach in the pyloric region has been referred to the same cause. Syphilitic *ulceration of the large intestine* is spoken of as sometimes causing persistent diarrhœa. In several cases of chronic diarrhœa, seen by the author, there has, indeed, been a syphilitic history, and in more than one there has been affection of the rectum; but whether the diarrhœa was caused by specific ulceration of the colon remained uncertain, in the absence of post-mortem examination. In one case of blood in the fæces, alternating with diarrhœa, iodide of potassium did a great deal of good. There is an affection of the rectum, which is now well known to be syphilitic,

and which causes stricture and great suffering. Usually about an inch above the anus, we find a hard ring, scarcely admitting the finger, and formed of thickened mucous membrane, with transformed subjacent cellular tissue. Below this stricture, the mucous membrane is turgid, and covered with pus: above, it is eroded. Women are most subject to syphilis of the rectum. This affection is accompanied by obstinate constipation, varied by diarrhœa, and causes wasting and emaciation. Dilatation by bougies and the use of iodide of potassium are both required. (See a monograph by A. Fournier on Syphilis of the Rectum.) *Peritonitis* is seen in syphilitic children in many instances, and occasionally in adults, when the liver is the seat of inflammation of a specific character. Simpson and Bærensprung give cases to illustrate this fact.

The *affections of the liver* due to syphilis have been explained by Ricord, Rayer, Wilks, Virchow, and Frerichs, and although some obstinate physicians seem still to doubt their connection with syphilis, the author thinks that this point is well made out. In the liver we find the occurrence of interstitial hepatitis, gummata, and cicatrices. There can be no doubt that many cases of supposed alcoholic cirrhosis of the liver are due to syphilitic inflammation of the organ. In such cases there is found after death a peculiar aspect of the organ. Instead of the granulations seen in alcoholic cirrhosis, we find a deeply furrowed condition of the liver, causing it sometimes to look like the 'kidney of a young calf.' This is due to the formation of new elements in the connective tissue of the organ and to the wasting of the liver cells. The edges of the liver are irregular, and the capsule is generally thickened. There are whitish patches seen in places, and, on section, bands of white fibrous tissue extending across the organ and causing the appearance of puckering observed at the surface. A more common form of syphilitic disease of the liver is that called gummy tumour of the liver. The liver in these cases is indurated, and attains, sometimes, a very large size. In post-mortem examinations of such cases it has been found that the liver substance is filled with small round grains, distinct from one another. The liver is yellow, hard internally, and, on cutting it, small hard tumours are felt to resist the knife.

In some cases, small tubercles, or nodosities, are found in the liver, of a yellowish white colour, dry, and surrounded

by a yellowish, callous, or tendinous tissue. These tumours are generally deep-seated, and are sometimes as large as an egg, but are generally the size of a pea or smaller. Sometimes they are found to be softened and partially absorbed. For a long time such tumours were called cancer or tubercle of the liver; but cancerous tumours of the organ are very moist and vascular, syphilitic not. Syphilitic cicatrices in the liver were noticed by Lancereaux in fourteen out of twenty-two examinations of visceral syphilis. The liver is liable to fatty degeneration in syphilis. Dr. Wilks and others have given cases to show that syphilis leads occasionally to waxy or amyloid degeneration of the liver; Graves and Budd erroneously attributed the waxy liver to a combination of syphilis and mercury. In some cases of syphilitic liver, a sensation of projections on the surface of the organ is experienced, similar to that felt in cancer. Ascites is found with the cirrhosed variety, and even with the gummy form of liver, but jaundice is rare. Diarrhœa is common, and is serous and sometimes blackish in colour. The urine is frequently albuminous, but, in some instances, the disease produces no symptom save marasmus, which is sometimes wonderfully benefited by large doses of iodide of potassium. The skin is discoloured, and the patient looks cachectic; these two symptoms, with the palpation of the organ, and a history of syphilis, may clear up the diagnosis in many cases. Tubercular peritonitis commences with pain in the abdomen, and with diarrhœa and vomiting; and alcoholic cirrhosis is met with in drunkards, there being the usual sour eructations to guide us. The specific disease is unfortunately but too often fatal, but much less so than other forms of hepatic disease.

The *Lymphatic Glands* are extensively affected in some old cases of syphilis. The volume of the thyroid gland is sometimes increased, and the supra-renal capsules have been found enlarged and degenerated in visceral syphilis. The spleen is sometimes affected just like the liver, with gummata, in the form of rounded nodosities. The glands of the abdomen are frequently attacked in syphilis, and may become indurated and enlarged. The spleen is sometimes felt to be enlarged, in children especially; and doubtless, syphilitic cachexia is due to a certain extent to the disease of this and other blood glands. In one case of bronzing of the skin seen by the author, there was a distinct syphilitic history.

Of late several cases of *Syphilitic Pericarditis* and even of gummy nodules in the substance of the heart have been brought before the London Pathological Society. The diagnosis in such cases seems out of the question. The gummy tumour is found in the muscles of the heart, the valves being usually intact. Such tumours are rounded and of the size of a pea, or even larger. Dr. Balfour of Edinburgh, and others, have narrated cases which leave no doubt that aneurism of the aorta and great vessels is rather frequently caused by syphilis; and Morgagni says that he has frequently seen the aorta ulcerated and corroded in the bodies of those who have suffered from syphilis. The cerebral arteries have been found obliterated in cases of syphilis, so that this disease causes arteritis in some cases. Dr. Wilks has given cases of aneurism of the aorta which he ascribed to syphilis (Guy's Hospital Reports, 1863).

The syphilitic *Diseases of the Larynx* have been long known; but those of the lungs are only being studied after the long period succeeding the doctrines of Laennec and Louis. The tertiary syphilitic lesions of the larynx are of grave importance. Ulcerations of the epiglottis, tending to perforate it, are found; ulceration of the mucous membrane over the vocal cords is by no means rare, and is of fatal termination in many instances. When such ulcers heal, they may leave behind them dangerous narrowing of the chink of the glottis. Gummy tumours develop in the mucous membrane of the epiglottis or vocal cords, soften, and ulcerate. Œdema glottidis is often caused by syphilitic inflammation, and the cartilages may become carious or necrosed. It is *said* that tubercular ulcers commence generally from below, and proceed upwards towards the larynx; but, in practice, the author has often found it very difficult to make the diagnosis between syphilitic and tubercular laryngitis, although sometimes the case is plain enough. There is aphonia and dyspnœa in most cases. The cough is short, and expectoration may be scanty or absent in some cases; in others it is purulent or tinged with blood. Asphyxia may take place rapidly from œdema glottidis. Deglutition is sometimes very difficult, especially when the epiglottis is attacked. At the North London Consumption Hospital the author has observed two cases of syphilitic laryngitis suddenly expire from dyspnœa caused by œdema. Laryngotomy was tried in one case, but did not much prolong life. Large doses of iodide of potassium

sometimes effect a cure, if given in time. In a soldier who was brought to the hospital in a dying condition, and in whom aphonia existed in company with syphilitic sarcocele and a small cavity in the right lung, the iodide quite restored the man to health in a few weeks, and he left in two months almost quite well. Pressure on the larynx was painful in this case.

The *trachea* is by no means very rarely affected in syphilis of adults or in hereditary cases. The lower rings are usually the ones affected; but sometimes the lesion occurs near the larynx. Ulcerations and thickening of the submucous tissue occur, and leave narrowing of the trachea, so that even a quill will not pass. A severe case of this kind was in the Metropolitan Free Hospital in 1869. A young girl, aged fifteen, suffering from hereditary syphilis, had great narrowing of the trachea, and various other syphilitic lesions present.

Small nodules have even been remarked on the walls of the *bronchi*, where there has been fibroid disease of the lung observed without any tubercle. The bronchi may, it is said, be extensively ulcerated, and filled with pus, from syphilitic ulceration. Whistling sound heard in inspiration is a clear indication of the lesion of the trachea, auscultation revealing nothing abnormal in the chest. The use of specifics is indicated in affections of the trachea of syphilitic origin, but under any treatment the worst must be feared, as tracheotomy is usually contra-indicated, the disease being too low down in the trachea.

Since Dr. Andrew Clark and others have drawn renewed attention to the old doctrine as to the compound nature of *Phthisis Pulmonalis*, we have begun to remember that ancient writers asserted the same thing. Baglivi, writing in 1745, says that phthisis is very often a secondary disease, for instance, after syphilis; and, in 1826, Van der Kolk speaks of certain ulcers or collections of pus in the lungs without any tubercle being present. It is now asserted by writers on syphilis, that the disease of the lungs occurs under two forms: firstly, that of interstitial pneumonia occupying the upper, middle, or lower lobes of the lungs; and secondly, where the tissue of the lungs is found hard, elastic, easily broken down, and non-crepitant in places. When such pneumonias are cured, a mass of fibrous tissue remains. Gummy tumours have been found in all parts of the lungs, in the form of greyish or yellowish white tumours,

the size of a pea or nut. These soften, and leave cavities, just as tubercles do, but are not unfrequently cured, and leave the cicatrices sometimes observed in the lungs of persons who have died of syphilis. In the case of a female patient who died of what the author believed to be syphilitic phthisis, at the North London Consumption Hospital, in 1868, there was a large cavity found in the middle lobe of the right lung, and cicatrices were found in the left lung, the tissue of which was indurated in several points, and non-crepitant. No clear tubercle was found in any part, but there were several small tumours in the left lung, about the size of a pea, similar to those seen in the liver in syphilis of that organ. In this, as in other instances of syphilis of the lungs, no dulness was observed on percussion, and the stethoscopic sounds were those of cavity in the right lung. The sputum was muco-purulent.

In several cases that have come under the author's notice, there has been little to guide the diagnosis, save the occurrence of cicatrices in the pharynx, depressions on the skull, or syphilitic sarcocele; and post-mortem verifications have too often been wanting. Such cases are eminently amenable to remedies, and large doses of iodide of potassium should at once be administered—as much as fifteen grains four times a day. Tuberculosis almost always commences at the apex of the lung, and progresses far more rapidly than syphilis of the lungs, which is one of the forms of chronic phthisis. The author had, he believes, no less than two cases of syphilitic phthisis under his care at one time at Hampstead. The one occurred in a soldier, aged about thirty, and the other in a man of about the same age, employed in a large wine store in Oxford Street. In both of these men there were extensive marks of tertiary disease over the body, and the lung symptoms were far advanced, and threatened to prove fatal. In one case, seen in 1867, two cavities filled with cheesy matter were found in the left lung, the lower lobe of which was indurated and non-crepitant. The upper lobe was healthy, and no tubercle existed anywhere. There cannot, then, be much doubt that, in many cases of pulmonary consumption, we find on careful inquiry a history of tertiary lesions in other parts of the body; and this should make us more hopeful and willing to try therapeutic agents in the fell disease which carries off one-eighth of the population of the British Islands.

The clinical study of *Syphilitic disease of the nerve-centres*

has of recent years attracted a very great share of attention from observers in England, France, and Germany. Syphilis is found to cause *headache, epilepsy, aphasia, hemiplegia, insanity, general paralysis* and *partial palsies,* and some say *ataxia.* The old writers knew of these diseases, for Thierry de Héry, in 1634, describes some of them, and Van Swieten, in 1773, speaks of vertigo, and even epilepsy, being caused by syphilis. John Hunter, on the contrary, speaks of the brain as one of the organs which perhaps are not susceptible to the action of syphilis. In 1803, a physician named Cirillo guessed that epilepsy might be due to the poison. Astley Cooper agreed (1835) with Hunter in considering that syphilis did not attack the brain. In 1861, even, Lasègue, of Paris (*Arch. g. de Méd.*, 1861, t. ii. p. 210), speaking of syphilitic nervous diseases, considered them as of doubtful occurrence, and disbelieved in syphilitic insanity.

Since that date the admirable researches of Hughlings Jackson, Broadbent, Buzzard, Green, Barlow, Wilks, Moxon, Weber and Payne, etc., in England, added to those of Ricord, Diday, Lancereaux, Fournier and Mauriac in France, and of Virchow, Wegner, Dittrich and Heubner in Germany, with Bergh and Bidenkap in Scandinavia, have thrown a flood of light on this most important of all parts of the pathology of syphilis.

The time at which affections of the brain may occur after contagion may be as short as the fourth or fifth month, or very late, for instance, twenty-four or twenty-six years. As a general rule, we may say that they come on from the third to the eighteenth year after contagion. They have been supposed by French writers to be far more frequent among persons who have over-worked their brains.

Some observers say that syphilis attacks the brain more frequently when the secondary eruption is slight. Fournier (*Syphilis du Cerveau*, 1879) mentions that in forty-seven cases of brain syphilis noted by himself, the skin disease was not in any way well marked. He holds that every case of syphilis, whether benignant or grave at first, may result in cerebral syphilis; and that the original benignity of a case, whether treated or not, is no guarantee against the chance of brain affection.

Syphilis produces in the brain either a gummy product or a gummy or sclerous arteritis, which latter is often followed by softening of the brain substance. Syphilis pro-

duces in the brain the same lesions as it does elsewhere—sclerosis or gummata. The lesions of the meninges are sclerous meningitis and gummy meningitis, of which the first is infinitely the more common. These are the most important of all the lesions which syphilis produces within the cranium, because most frequent and most severe in their effects. Their action may extend to the nerves, the vessels, or the brain. When they act on the nerves they produce palsy of the cranial nerves, when on the vessels they compress, narrow, or occlude these; and when they act on the brain they may do so by infection or by obliteration of the vessels which nourish it. Sclerous arteritis has been well described by Heubner (*Die Luet. Erk. der Hirnart.*, Leipzig, 1874), as also by Moxon, 1869, H. Jackson, 1874, Lancereaux, 1874, etc. It takes place in this way. First of all there is more or less abundant proliferation of the young cells in the vascular sheath, or even in the coats of the vessel. Then comes progressive organisation of these cellular elements, with formation of rigid and fibroid lamellæ, with deformity or obliteration of the arteries. Dr. Buzzard (*Clin. Asp. of S. N. Aff.*, London, 1874), found in one case the circle of Willis almost entirely converted into a rigid and knotty cord. Charcot (*Rabot, Lesions S. des Art. Cer.*, Paris, 1875,) mentions a case where there was sclerosis of the basilar artery. Stenosis, thrombosis, and complete obturation of the vessels may result.

Occasionally cerebral gummata have been seen as large as a walnut or hen's egg. Gummata may occupy any part of the brain, but they generally are seated in the periphery, and most frequently in the front of the brain and the middle portion of its base. It has occasionally happened that gummy tumours in the cranium have been mistaken for cancer or tubercle. Tubercle, however, is almost exclusively found in youth, and in scrofulous or lymphatic persons, and it has a predilection for the cerebellum. Gummata also coincide very frequently with softening of the brain, which is not noticed in tuberculosis.

The common lesions resulting from syphilis in the cranium are inflammation and softening from ischemia. As example of the first we have peripheric irritative phenomena, usually chronic and very slow in progress. The great majority of autopsies show the existence of softening due to ischemia. This secondary affection of the brain is far the most common cause of the symptoms noted in patients, and death is

most commonly caused by softening. There are several headings under which the symptoms produced by syphilis may be grouped, viz.: headache, the congestive, the convulsive or epileptic, the aphasic, the mental, and paralytic forms.

Syphilitic headache is markedly internal and deep in character, sometimes like a nail driven into the head, at other times diffuse. It is sometimes terribly severe, often nocturnal and most tenacious. The pain may even cause delirium, or prompt to suicide. Headache of this kind may last for years. It is one of the earliest symptoms of the disease, and should be most sedulously attended to and treated carefully. In the congestive form we notice vertigo and sudden affections of the mental faculties, with affection of vision for short periods, or buzzing in the ears. In the case of a gentleman who eventually became paralytic and aphasic, there were symptoms of this kind for many years. Low spirits and impotence may also be the result of this congestive form of syphilis of the brain. There may also be paresis of the cranial nerves, with slight ptosis, strabismus, mydriasis, or facial or lingual paresis. Cases have been cited (Zambaco, *Aff. N. S.*, Paris, 1862,) where headache has been followed by blindness and coma. Fournier (*loc. cit.*, p. 139) mentions a case of coma where he thinks he saved life by giving iodide of potassium in large doses.

Cerebral syphilis, then, may give rise suddenly and prematurely to the gravest coma. This coma may be amenable to specific treatment. Hence, in cases of sudden coma, it is always well to bear in mind the possibility of the cause being syphilis, and to try an energetic treatment without delay.

Syphilitic epilepsy is now a well-recognised variety of epileptic attack. It occurs most frequently in adults—males, of course, for the most part, since men are so much more frequently affected than women—between the ages of thirty and forty. It has been stated that nine-tenths of the cases of epilepsy occurring in adults are due to this cause. It is one of the common symptoms of cerebral syphilis. Ferrier's experiments explain why this should be so. The lesions caused by syphilis affect the periphery of the brain, or the grey matter of the convolutions, the meninges being first attacked in many cases. The epileptic fit in syphilitic cases is not to be distinguished from that of essential epilepsy merely by its aspect, either in the pheno-

mena presented in the *grand mal* or in those of the *petit mal*. Sometimes the epileptic fit is the first symptom of the cerebral lesion; at other times it occurs late on in the disease. The invasion of such epileptic fits is often preceded by pallor, emaciation, languor, and headache.

The first fit of epilepsy will most probably be followed by many more. At first the fits succeed each other after comparatively long intervals; but they come on with less and less interval as the disease advances. The fits are frequently preceded by a severe headache, usually in one of the temporal fossæ. They may be preceded by an *aura*, such as the perception of a flash of light, or some strange sensation in the upper or lower extremities. The fit itself is purely convulsive in its form at first, but gradually it is accompanied by other symptoms, such as momentary vertigo and loss of consciousness (*petit mal*). It may even be accompanied by delirium, and prompt the patient to commit some violent action. In a short time the epileptic seizures are probably followed by some form of paralysis, and finally the patient may fall into dementia and die. Patients with syphilitic epilepsy often become in a short time quite unfit for business, indifferent, morose, and taciturn. The memory often becomes greatly enfeebled, and the patient may forget the names even of his own children. The affections are, at the same time, impaired, and the patients seem often to live merely mechanically. Partial palsies often accompany the fits.

With regard to the diagnosis of syphilitic epilepsy, it is sometimes difficult. There seems to be no initial cry in the great majority of cases mentioned by authors. There is a far greater frequency of consecutive paralysis after syphilitic than after ordinary epileptic seizures. Occasionally there are partial convulsions, and in others consciousness is maintained during the convulsive attack. The convulsions may be limited to one extremity—the arm, or one side of the face. In some cases the patients suffer very great pain during the fit in one of the extremities or other part. Partial or symptomatic fits are not seen in purely nervous epilepsy, whereas they are common in syphilis. Numerous facts collected by Drs. Charcot and Pitrés (*Rev. Mén. de Med. et de Chir.*, 1879) show that, in partial epilepsy in animals, there is always some alteration of the grey matter at the level of the cortical motory zone (fronto-parietal). Some persons have maintained that fits of syphilitic epilepsy are more

commonly nocturnal than those of essential epilepsy. This does not seem to be true. One distinguishing feature of syphilitic fits is, that the patient is a sick man in the intervals between the attacks, which is not the case with the ordinary epileptic. Headache, vertigo, or some form of paresis occurs in very many cases; and, in addition to this, the symptomatic epileptic fit is first developed in an adult, and not in a child or adolescent. These are all symptoms suggestive of the possibility of syphilis; but they are not pathognomonic, and perhaps the only clear diagnostic mark is the results of specific treatment. Naturally, there will be great probability that the case is one of syphilis if we find gummy disease in any organ. If, again, we can find no other evident cause for the fits, such as alcoholism, uræmia, tubercle, lead-poisoning, tumours in the brain, or meningitis, we will do well to try an anti-syphilitic treatment. It may be said that all cases of epilepsy coming on in adults who have had syphilis (and also even where all such antecedents are wanting, but where no other cause can be assigned), should be treated specifically.

The conjunction of aphasia with cerebral syphilis is quite a recent discovery. There is no medical man of any experience who has not seen cases of this causation of aphasia. One of the best monographs on the subject is due to Dr. Tarnowsky, a professor at St. Petersburg, and which appeared in 1870. The conjunction of right hemiplegia with aphasia is almost habitual. Aphasia often exists alone, however, without any paralysis, or it may occur with left hemiplegia, amaurosis, paraplegia, epilepsy, or glossoplegia. It is thought that there is a centre of motory influence for the lips and tongue in the third frontal convolution.

Syphilitic aphasia may supervene suddenly, as I have seen it in several cases, or slowly. The sudden form is the habitual one. It may be slight or complete. Sometimes it appears to consist in a forgetfulness of words; at others, there is complete loss of language. Broca defines aphasia more generally: 'The loss or perversion of that faculty which permits us to establish a relation between an idea and a sign, whether that sign be a word, a gesture, or any mark whatever.' This remark applies to syphilitic aphasia, of which there are all varieties. This aphasia is sometimes a passing symptom; at other times it is permanent, and quite unamenable to treatment. Complete and permanent aphasia may occur in the first and early months of syphilis,

at a time when roseola and other secondary skin affections are present. Of this I have seen examples. It may occur twenty years after the chancre, or at any intermediate epoch. For instance, in one case I saw complete aphasia and right hemiplegia come on in a man in the midst of a secondary eruption of roseola; and in a gentleman who had iritis and chancre in 1851, there was complete aphasia and right hemiplegia in 1871.

The diseases of the intellect produced by syphilis are various. The commonest form of mental disease seen in syphilitic patients is that of progressive dementia, but delirium and mania are also occasionally caused by cerebral syphilis. Syphilitic insanity, then, is not an unknown malady, as some have alleged. Patients with cerebral syphilis are often remarkable for want of memory, or intellectual debility. Such patients become nonchalant and forgetful, and may commit numerous faults in business. The patient becomes quite unlike himself, and neglects his family and relations, or maltreats them. Want of memory is one of the most striking characteristics of the disease. It may be sudden and complete. This state may pass into one of intellectual depression with incoherence, when the patient becomes entirely unfit for business, and gradually sinks into complete dementia. In rare instances cerebral syphilis may cause symptoms resembling melancholia or hypochondriasis, and the patient may have ideas of being persecuted, or desire to commit suicide; but this seems usually to result from delirium.

In other instances, the lesions of cerebral syphilis may cause excitement, delirium, or exaltation. Patients of this kind may have attacks of furious mania. Others, again, become eccentric and excitable, and are considered by their friends as rather out of their senses. They waste their funds and fail in business, or talk incessantly. There are patients, again, who are distinctly maniacal. They are excessively irascible, and often violent, abusive, and even dangerous to the bystanders. They are often sleepless, and capable of great muscular exertion. In short, they resemble ordinary maniacs. Numerous cases of this kind have of late years appeared in various medical journals in this country and abroad.

Dr. Batty Tuke (*Jour. of Ment. Sc.*, 1873-4, vol. xix.) mentions a case where a syphilitic patient had delirium with hallucinations; and Dr. Grainger Stewart ('Syph. Insan.,'

B. M. Jour., 1870) mentions a case of insanity where the form of monomania was observed. In short, the incoherence, the delirium, the mania, and melancholy, and all other mental perturbations seen in syphilis, are perfectly similar to those which arise from other cerebral lesions. Zambaco mentions the case of a patient who had primary and secondary symptoms in 1857, and who in 1859 had headache, and became so maniacal that he was placed in a lunatic asylum. He was put under specific treatment, and in two months was cured. Such cases, when not treated, or when refractory to treatment, end usually in dementia.

It is generally thought that the disease called general paralysis of the insane is not caused by syphilis. Dr. Griesinger, however, writing in 1873, seems to be of the opinion that all cases of this disease are syphilitic. Truth cannot lie in both of these opinions. Dr. D. Skae (*Jour. of Ment. Sc.*, 1875) mentions some cases of undoubted general paralysis occurring in syphilitic patients. There seems no evident reason why syphilis should not be *one* of the causes of this disease. But syphilitic disease of the brain often produces symptoms which have much resemblance to the disease in question. In general paralysis we notice intellectual and motor disturbances first of all, and with these, in many instances, vertigo, epilepsy, maniacal attacks, etc. This holds true also in cerebral syphilis. In some post-mortem examinations of patients who have succumbed to cerebral syphilis we find the meninges thickened and opaque, and this is accompanied by affections of the grey matter, which becomes adherent to the meninges and altered in various ways, softened, or degenerated.

There are, however, certain features in ordinary general paralysis of the insane which make it distinguishable usually from cerebral syphilis. The patients who suffer from it are remarkable for the perfect satisfaction which they feel with their own position in life and with their surroundings. These are the insane who in asylums are wont to consider themselves kings, or great artists, or illustrious characters of some sort. Such a condition of mind is rare, indeed, among those who are the subjects of syphilitic brain disease, who are generally timid and depressed. Trembling of the tongue and lips, so common in general paralysis, is wanting in cerebral syphilis. In syphilitic cases, too, there is tendency to paralysis, which does not occur until far on in the general paralysis of the insane. That paralysis consists

rather in want of co-ordination of movements than in loss of muscular power. Patients, again, with general paralysis, maintain their health, become stout, and digest well, which is not usually the case in cerebral syphilis. Then, again, in general paralysis the grey matter of the convolutions is far more extensively affected than it is in cerebral syphilis, where the predominating feature is a hardening of the meninges. Lastly, general paralysis of the insane is always fatal, whilst the syphilitic lesion which simulates it is curable in some cases.

There are few cases of cerebral syphilis which, if untreated, do not lead to some form of paralysis, either of the cranial nerves, or of the form of monoplegia or hemiplegia. The cranial nerves attacked are, first of all, the motores oculi, then the facial and hypoglossal, and the optic and auditory nerves. The olfactory and fifth pair are far less frequently attacked, and least of all the pneumogastric and spinal accessory nerves. Paralysis of the motores oculi is frequently the first symptom of cerebral syphilis, and the third pair are chiefly affected, although the sixth nerve is not unfrequently affected, and even the fourth. The cause of this frequent lesion of the third nerve is anatomically explicable by its situation, its long course, and the fact that it lies exactly at the part of the brain where the meningeal affections most frequently occur. In paralysis of the third pair we notice ptosis, divergent strabismus, with diplopia, and sometimes mydriasis; in paralysis of the sixth, convergent strabismus, and consequently diplopia. In the paralysis of the fourth nerve diplopia is observed relatively to objects situated in the lower half of the field of vision, the head being often inclined down and towards the side of the affected eye. These palsies come on generally insidiously, but occasionally they are preceded by headache. They sometimes occasion only slight diplopia for some months, and patients will notice this for some time, and not comprehend its meaning. Generally, if untreated, they get worse or remain stationary. They occasionally disappear without treatment. These palsies are occasionally incomplete and partial. Thus, ptosis is not unfrequently the sole lesion observed, and I have not once alone seen mydriasis as the only symptom of cerebral syphilis. There seems some reason to suppose that the centre of innervation for the upper eyelid and rectus superior differs from that for the other recti muscles, which will account for the occurrence of ptosis alone.

M. Ricord used to say, 'A palsy of the eye-ball is, as it were, the signature of syphilis on the patient's eye.' It is certain that by far the majority of all cases of paralysis of the muscles of the eye are due to this cause—perhaps three-fourths of all. Thus, whenever we notice in a patient the supervention of ptosis, diplopia, or squinting, or of mydriasis, it is most important that we should at once think of the probability of there being a syphilitic lesion of the brain; and also that we should recollect that the danger is grave in all such cases, that treatment should not be delayed, and that it should be energetic.

The affections of the auditory nerve caused by syphilis are buzzing, whistling and ticking sounds, or deafness of various degrees. The affections of the optic nerve are by no means rare, and occur in perhaps one-tenth of all cases of cerebral syphilis. They are sometimes unilateral, but much more frequently bilateral and progressive in their evolution. They are of all degrees, from slight amblyopia to complete blindness. Of the latter I have at this moment an example in a woman who has complete amaurosis in the right eye, combined with ptosis. The lesions seen in these cases are known as optic neuritis and atrophy of the disc. Descending optic neuritis is known by the intense redness of the disc, conjoined with a slight degree of swelling. The central veins, too, are dilated and tortuous, whilst the arteries are diminished in calibre. Gradually the nerve-fibres degenerate and atrophy ensues, which is known by the pearly aspect of the papilla and the absence of vessels. These testify to the presence of a lesion seated behind the optic nerve, within the cranium. Dr. Hughlings Jackson considers the presence of optic neuritis with lateral convulsions as generally a sign that there exists a syphilitic lesion of the convolutions of the brain. He also states that such optic neuritis may co-exist with perfect vision ('A Physician's Notes on Opthal.', p. 7). Hence it is well to examine the eyes of all syphilitic patients who present any cerebral symptoms.

In a few cases the facial nerve is affected in cerebral syphilis, but this is almost always a partial palsy, which does not attack the orbicularis palpebrarum.

The hypoglossal nerve is occasionally, but rarely, affected in cerebral syphilis. It is sometimes rendered quite immobile. The olfactory nerve is extremely rarely affected when the disease is seated in the cranium. It would appear

that the pneumogastric is occasionally implicated, as evinced by the occurrence of vomiting and hiccough.

One of the peculiarities of cerebral syphilis is, that it gives rise sometimes to palsy or paresis of *one* extremity. In many cases there is transitory paresis of one of the upper extremities, which may, in rare instances, terminate in paralysis. The same may happen with one of the lower extremities.

Hemiplegia is one of the most common forms of syphilitic paralysis, and occurs generally in the tertiary period; but it may occur in the early months of the disease as an exceptional fact. Generally speaking, it may be expected from the third to the twentieth year of the disease. The disease is due either to the direct influence of a syphilitic special lesion, or to inflammation caused thereby, or to what is called ischæmia, resulting in softening of the brain surface from cutting off the supply of blood. In the first class of cases a cure is possible; in the second, not. Headache is a common precursor of these attacks, and presents nocturnal exacerbations. Vertigo, also, and attacks of amblyopia are common, and occasionally the patient finds some difficulty in pronouncing a word, or weakness in one of the extremities, etc. Hyperæsthesia of one of the parts to be attacked is sometimes noticed. Occasionally slight attacks of hemiplegia occur and disappear, but relapse again, and then remain permanent. Syphilitic hemiplegia exceptionally takes on the appearance of apoplexy, with or without loss of consciousness. The more common form is the progressive one. The patient may be able to walk for hours after the first symptom supervenes, or weeks may intervene before the paralysis is complete. The hemiplegia generally takes place whilst the patient retains his consciousness. It is not rare to find it occur during the night. Syphilitic hemiplegia is generally incomplete, or there may be simply paresis. The face alone may be paralysed, without the limbs, or *vice versâ*.

Whether sensation is affected or not in syphilitic hemiplegia is a question of where the lesion is seated which causes it. Generally there is no loss of sensation, but now and then there is a little. When complete hemianæsthesia occurs, it is believed to indicate the implication of the posterior third of the *internal capsule*, which lies between the optic thalamus and the lenticular nucleus. Hyperæsthesia and paræsthesia have also been observed (Broadbent, *Lancet*,

1876). The intelligence is sometimes unaffected; at other times it is, according to the seat of the internal lesion. In most cases there is some injury done to the intellect, and in some the hemiplegia is the first act in the tragedy which ends in dementia. In many instances syphilitic hemiplegia is accompanied by ocular paralysis. Double hemiplegia is occasionally seen in cerebral syphilis. One side is first attacked, and the other gradually becomes so. One side of the body is invariably less affected than the other. In such cases there are, of course, bilateral lesions in the cranium, such as affections of the two sylvian arteries, causing softening of the C. striata.

As to *diagnosis*, in syphilitic hemiplegia we find, usually, either headache, or epileptic attacks, or transitory paralysis. Consciousness is often maintained, and the palsy comes on gradually, and is usually partial. Ocular paralysis is a frequent concomitant, and amaurosis or mydriasis. Facial paralysis is not very unusual. These are all rare accompaniments of a fit of ordinary hemiplegia. In addition to those symptoms above alluded to, we have the possibility of the presence of some skin eruption, or sarcocele, etc., to assist us, and the age may also give us a hint, for syphilitic hemiplegia usually attacks persons under the age of 45, and it may occur as early as 20. Dr. Fournier found that out of 60 cases of syphilitic hemiplegia, 51 were younger than the age of 41. The effect produced by specific treatment is often a good diagnostic point in obscure cases. In doubtful cases, iodide of potassium in large doses should therefore be employed.

Certain patients with cerebral syphilis have considerable difficulty in walking straight; others have some of the symptoms of chorea or athetosis, when the hands and feet and fingers and toes only are affected with slow and regular movements. The paralysis called labio-glosso-laryngeal may be caused by cerebral syphilis. In such cases we find the usual symptoms of this disease—difficulty in articulation, incessant flow of saliva, mastication slow and painful, paralysis of the tongue, and difficult deglutition. It would seem that specific treatment may cure even such a forlorn case if administered in time. Albuminuria, diabetes, and polyuria may occasionally arise as consequences of cerebral syphilis. Polydipsia and polyuria seem the most common of these rather rare complications, due probably to some lesion in the fourth ventricle.

Laryngeal paralysis and vomiting have also been alleged to arise from cerebral syphilis, with affections of the circulation (Broadbent, *Lancet*, 1876). Dr. Buzzard mentions a case where treatment cured a patient suffering from paralysis of both upper and both lower extremities, double facial paralysis, and difficulty in deglutition, respiration, and articulation. The effect which cerebral syphilis often exerts on the general health is sometimes most striking; the patients exhibit a cachectic aspect.

Syphilitic hemiplegia, or other paralysis, may remain stationary, without further complications, for many years; but epilepsy rarely remains without getting worse. The same holds good in cases of disturbances of the intellect. Unless rapidly cured, these tend to end fatally. Too many cases of syphilitic hemiplegia are unamenable to treatment, and such patients become, in the best years of life, a burden upon others. Specific medication has least influence on the mental disturbances caused by syphilis.

Cerebral syphilis may end fatally in a year or two, or even in a few months. The patients may also remain blind or deaf in one ear. In such cases the patient may live on indefinitely, even for forty years, with impaired memory, or loss of speech, ptosis, mydriasis, squint, etc. Some patients may be cured even when greatly affected. Ramskill cites such a case in the *Lancet* of March, 1869, where a patient who was blind, hemiplegic, epileptic, maniacal, etc., got quite well under treatment. These are, however, most exceptional cases. With respect to prognosis, Dr. Fournier (*loc. cit.*, p. 576), mentions that of 138 cases of cerebral syphilis observed by him, 14 had died, 33 remained infirm, and 30 had been cured. Hence the prognosis is very grave. The epileptic form is not so grave in prognosis as the paralytic or mental. Fournier alleges that the most important point in prognosis is the presence or absence of a sufficiently active treatment, *i.e.*, mercurial frictions and iodide of potassium for a long time. Relapses after cure of this form of syphilis are very common, just as they are in other syphilitic symptoms, such as gummy tumours of the tongue or exostoses, which may relapse over and over again, even for six or eight years.

The treatment of cerebral syphilis will be spoken of in the chapter on the therapeutics of syphilis. Meanwhile, it will be as well to say that some practitioners of great experience, such as Dr. A. Fournier, of Paris, are accustomed to

use very vigorous courses of mercurial inunction, combined with large doses of iodide of potassium, in *all* cases of brain disease of this causation. Dr. Buzzard, one of our most esteemed English authorities, says that he begins with the iodide of potassium in 10-grain doses, and increases these; but, if this treatment be not successful, he proceeds to administer the biniodide of mercury, and adds that this is often of great service in cerebral syphilis. Mauriac speaks less hopefully.

Having thus given a sketch of what is known with regard to syphilitic disease of the brain and its surroundings, I will say but very little about *syphilitic lesions of the spinal cord*, both because much less is definitely known about this subject, and because the affections of the cord caused by syphilis much resemble those of the brain and its envelopes. Syphilitic affections of the cord usually are found in the dura mater; but the cord itself may be turned into a substance like fibrous tissue, the nerve-cells being obliterated; or it may be softened, just as we have seen to be the case in disease of the meninges and arteries of the brain. Cases of gummy tumour have been found in the cord resembling those noticed in the liver (Wilks). Fournier has written a most interesting monograph on locomotor ataxia caused by syphilis, in which that most learned and experienced syphilographer truly observes that the sclerosis caused by syphilis is just what can well explain the occurrence of locomotor ataxy in many cases, since it would naturally cause destruction of the nerve-cells wherever present. But why syphilis should select the posterior columns of the cord is not quite so clear. However this may be, Fournier's statistics and observations make us inclined to suppose that syphilis *may* be the cause of ataxy in more cases than have hitherto been laid at its door. Paraplegia is very frequently syphilitic in causation, and all physicians of experience in diseases of the brain and spinal cord are now unanimous in admitting this fact. There is sometimes a difficulty in ascertaining whether the lesion which produces a paralysis of the extremities resides in the cranium or the cord—for instance, when all four extremities are affected. When the brain is affected, some cranial nerve will be probably implicated; and when any muscle connected with respiration or the sphincters is affected, the cord must have been injured. A sensation of constriction around the body is a good symptom of spinal disease, and this may be felt at all levels, from the axilla

to the pelvis. This symptom is not seen in cerebral, but only in spinal disease. The treatment of syphilis of the cord is identical with that of cerebral syphilis.

One of the most common and dangerous affections of the later periods of syphilis is the rhinitis, which causes ozæna. One nostril is generally first attacked, and the patient complains of obstruction, and sometimes of pain at one point. The external integument may become red and inflamed. Sero-sanguineous fluid begins to exude, and is often fœtid. When the inflammation is confined to the anterior part of the fossa, crusts are seen covering ulcers. But, unless checked, the disease generally attacks the cartilages and bones of the nose, and may cause the nose to become flat and thin (sheep's nose). This is a most serious lesion, and requires vigorous medication. with large doses—such as a scruple—of iodide of potassium, in a wine-glassful of water, thrice a-day, to cure it. Topical remedies are, the author thinks, not of much avail when the disease is deep-seated, but the iodide is in this case a perfectly wonderful specific. The author has not often seen it fail, and can warmly recommend large doses of the salt in ozæna syphilitica. Scrofulous lesions of the nostrils resemble syphilitic in many points; with care, however, the diagnosis may generally be made out. Scrofula is, in some rare cases, so like hereditary syphilis as to be almost identical, and the author has recently had a case of ozæna in a girl aged fifteen, which completely puzzled him. It was much benefited by iodide of iron. The nasal canal has been long known to become inflamed in syphilis, especially in the later periods. The bone not unfrequently becomes necrosed. The author has not unfrequently met with disease of the canals, with epiphora, in hereditary syphilis. In the case of a young woman of the age of eighteen, some years ago under his care, with interstitial corneitis, epiphora, and pegged and notched teeth, Mr. Couper, of the Royal Ophthalmic Hospital, cauterised the canal in its whole length, and thus cured the epiphora. In some cases bridles are found across the canal, and the os unguis is not unfrequently attacked. Large doses of iodide of potassium will often effect a rapid cure when the affection is acute.

There is sometimes ulceration of the eyelids in the later period of syphilis. Interstitial keratitis is not so rare in adult syphilis as some believe, but is very commonly met with at the Moorfields Ophthalmic Hospital in hereditary

syphilis. Cataract is by no means rarely caused in hereditary cases by syphilis; the author has seen several examples of this fact on the operating table in Moorfields. The author was surprised to find that Dr. Alfred Fournier of Paris (August, 1871) had not met with any cases of hereditary disease of the teeth, as described by Hutchinson. Loss of vision may be occasioned by caries of the sphenoid, or by syphilitic tumours pressing on the optic nerve. There may be complete loss of vision, too, from changes taking place in the interior of the orbit, and seen by the ophthalmoscope, such as contraction in the size of the arteries and atrophy of the papillæ. In such cases iodide of potassium is often powerless to prevent the supervention of blindness. The author has seen several cases of deafness in hereditary syphilis. Descending optic neuritis, iritis, and choroiditis, are the commonest diseases of the internal structures of the eye caused by syphilis. Blindness, or complete amaurosis, is by no means a very rare consequence of the disease, and this is usually caused by atrophy of the disc or by choroiditis. Syphilitic iritis is also not very uncommonly a cause of loss of vision. This subject will be referred to in a subsequent chapter.

CHAPTER VIII.

SYPHILIS IN WOMEN.

EVERY person acquainted with the literature of the subject must be aware that the doctrine of the *dualism* of the chancre has had most difficulty to contend with in the case of the female. Those familiar with primary syphilis in the male know how comparatively easy a matter it almost always is to say whether a lesion on the genitals is likely to be followed by other symptoms or not. But it is also well known that this comparative certainty in diagnosis is not nearly so well made out in women, so that *unicists* have still a stronghold which requires to be taken by those who believe that syphilis is quite a different disease from soft chancre. Dr. Charles Mauriac, physician to the Hôpital du Midi, at Paris, has, in his notes to a translation of Dr. West's work on 'Diseases of Women'—a translation which Dr. West has expressed his warmest admiration of—given some excellent hints as to the present position of the question, which are well worth noticing. He says that all great constitutional diseases, with multiple manifestations, which attack all the tissues and organs of the body, present nearly the same appearance in the female as in the male. Syphilis is no exception; but it must be admitted that the predominance of certain forms of temperament, and particularly of the nervous temperament, with the conditions inherent in the manner of living, diet, and other habits, as well as the special conformation of the genital organs, exaggerate or lessen certain manifestations of syphilis in women.

With regard to the situation of hard sores in the female, Dr. Fournier of Paris, in 249 cases where this lesion occurred, found the hard sore in 114 cases on the labia majora, in 55 cases on the labia minora, in 38 on the fourchette, and no less than 13 times on the cervix uteri; on the clitoris 10

times; at the entrance to the vagina in 9 cases; at the orifice of the urethra in 7 cases; at the upper commissure of the vulva twice; and only once in the vagina. As a rule, most authorities look on hard sore on the cervix uteri as not having been clearly proved to exist; but Fournier is not of this opinion. His statistics show that it occurs there once to 18 times in other regions; and he contends that this is seldomer than in all probability it must occur, taking into account that the chancre in this region rapidly cicatrizes and disappears. With regard to the extraordinary immunity of the vagina from syphilitic chancres, no clear explanation has ever been given. The occurrence of induration in secondary symptoms which occur in the vulvar region is very common indeed. In the case of such hard sores as occur on the vulva, too, the induration is often more marked than it is in the male. Even on the cervix uteri this sore seems occasionally to be marked in its induration; and M. Ricord mentions a case where he witnessed a well-marked induration in this region, the uterus being prolapsed. In short, there is the same distinction between the hard and soft sores in the female as there is in the male, and there is no use of making the question more difficult than it really is.

The mammary chancre has been carefully studied of late years. At its commencement there is seen a reddish elevation, slightly eroded, or a fissure. When developed, there is an eroded papule, or a pustule of ecthyma, such as might be seen in cases of itch or boils, covered by a scab. This may cover a surface as large as a sixpence, but usually it is smaller. As a general rule, the floor of the erosion is varnished, reddish in hue, with a zone of lively redness around it, and with a well-marked induration of its base. No scar is left when this chancre heals.

The chancre of the cervix uteri is situated either centrally or excentrically. When central in position, it sometimes passes up into the cavity of the cervix. It is said to be rarely larger than an almond, and to be papular in form. It has a greyish floor, without edge, properly so-called, and is surrounded by a narrow red areola, which makes its own greyish or pale colour more noticeable. This erosion gives no pain. The chancre has very little secretion, and its base cannot easily be ascertained to be indurated, because of its position. It is rare that a hard chancre in this situation causes any swelling of the inguinal glands, whilst hard sores on the mammary gland are usually followed by indurated

glands in the axilla, just as the same sores on the external genital regions are followed by enlarged glands in the groins, and sometimes also by enlarged glands in Scarpa's triangle. Herpes on the female organs, as in the male, is often mistaken for the initial lesion of syphilis. It has, however, no indurated base.

Secondary syphilitic affections on the cervix uteri may be erosive or papular in form, and often stimulate the hard sore in a way that is very puzzling. In cases where there is a soft chancre on the os uteri, we shall, in all probability, find some soft sores on the vulva, or at the entrance to the vagina. Auto-inoculation will produce a soft sore where such exists on the cervix uteri, and will have no result where a hard sore exists.

The primitive accident of syphilis, then, the so-called *infecting chancre*, is formed by the same histological elements, and presents the same structure and the same progress in the two sexes. That is a fact which reasoning ought to make us admit *à priori*. Have not the tissues, the blood, and all the elements, the same chemical composition, and the same arrangement, in the female as in the male? Eruptions of measles, or variola, or scarlatina, present no difference in character in the two sexes. Why, then, should we suppose that the primitive manifestation of syphilis should not be the same in the two sexes? Still, superficial observations have led some to give out this hypothesis, as if it expressed a reality. These persons assert, above all, the frequent impossibility of making out any specific induration in women. But, whenever syphilis is introduced into the organism by other parts than the genito-urinary organs, do we not find in the face, on the lips, on the fingers, &c., the same architecture in the gates which admit it? Mr. James Lane, in a note to the author in a former edition of this work, says: "the rarity of induration in women has been much exaggerated." And, if in the case of the vulva we should notice some deviation from the classical type, why should we give to this the proportions of a radical anomaly, when it is only a very accessory phenomenon, and easily explained?

Syphilitic induration, the pathognomonic value of which has perhaps been exaggerated, is frequent, and even of constant occurrence in the genital organs of women, not only when the primitive accident is concerned, but even in the later accidents of the disease. The form of the female

organs renders them not so easily explored as the male ones. The patients, not being aware of the gravity of a lesion which appears insignificant because it causes no suffering, come only late to consult the doctor, when the induration of the tissues has disappeared. This accounts for the fact that even those persons who make a specialty of the diseases of women have so rarely seen indurated chancres in that sex.

On the labia majora, however, the Hunterian chancre is often well marked, hard, cartilaginous, or wooden. Sometimes it is surrounded by an extent of œdema, which forms a sort of *sclerema* of the parts. On the covering of the clitoris, it appears as a slight erosion on a parchment-like base, or sometimes on a very hard, wooden-like base. On the fourchette, or the fossa navicularis, or entrance to the vagina, the sores are parchment-like, very small, superficial, and non-ulcerated, so that it is not at all surprising that they are frequently overlooked. Ulceration is by no means the most common or most important symptom of the syphilitic sore. It is sometimes late in coming and very imperfect, whilst in soft sores the ulceration is very prominent. Soft chancres do not infect the constitution of women any more than they do that of men. These accidents remain only local. Of course, prostitutes are liable to have such sores continually, even when syphilitic, and thus it may easily be said that the origin of their syphilis was a soft sore. The diagnosis of the syphilitic from the soft sore is made usually easily enough in the female, unless when seated on the neck of the uterus or vaginal cul-de-sac.

Women are, generally speaking, much more affected by syphilis than men are. The virus may awaken in that sex any tendency to consumption or scrofula, and may also give rise to eczema and other eruptions to which the patient may be constitutionally predisposed. The pigmentary syphilide has been mentioned as being almost exclusively special to the female sex. I have scarcely ever met with this form of syphilide in a man. It is seated 95 times in 100 cases on the neck, and can only be confounded with chloasma. But this latter skin affection has a slight desquamation, which is not the case in the pigmentary syphilide. Most observers are agreed that the use of mercury has the power of attenuating, or even aborting in some cases, secondary eruptions in the female, especially when they belong to the most superficial and slightest varieties. Fournier, however, thinks that, in rupia and ecthyma, it is better to use both mercury and iodide of potassium. With regard to the alopecia

caused by secondary syphilis, it is very important that all practitioners should remember that this affection is only temporary, and that it never is the cause of baldness. No treatment does it much good. Some females lose almost all their hair during the secondary period—the eyebrows and eyelashes, as well as the hair of the head. It gives such women great consolation to know that the hair will again return in its former luxuriance.

What are commonly called 'mucous tubercles' in France, or condylomata in this country, are secondary syphilitic appearances which are spontaneously developed, which secrete a fluid secretion, are never auto-inoculable, but are eminently contagious. They are the chief means by which syphilis is kept up, since this lesion in the female is very subject to relapses. The mucous syphilides are divisible into four forms—erosive, papulo-erosive, papulo-hypertrophic, and ulcerous. The third variety, the papulo-hypertrophic, consists of papules which have become greatly enlarged, sometimes forming true mucous tumours. Bad cases of mucous tubercles are chiefly noticed among the poorest and most careless women, and rarely among cleanly persons. They are best treated by frequent ablutions, dusting with oxide of zinc powder, and isolation of the surfaces by means of a pledget of lint and a T bandage. Neither calomel nor caustic applications are needed in the vast majority of cases. Such simple treatment often effects a cure of the most formidable looking cases in a week or so. The fourth variety, the ulcerous, requires sometimes the application of a piece of lint dipped in a weak solution of nitrate of silver. In rare cases, mucous syphilides of the papular type are seen on the cul-de-sac of the vagina, and more frequently mucous tubercles of the erosive and papular forms are seen on the cervix uteri. The ulcerous form is rarely seen on the cervix uteri. Doubtless such lesions as these may account for the communication of syphilis in those obscure cases where the female has been supposed to be free from any infecting symptom.

In women, as in men, syphilis in its secondary period may produce periostitis, periostosis, or ostealgia. Periostitis is far more common in women than in men, and so are these slight elevations on the surface of the bones, especially on the tibia and cranium, sternum, or ribs. Ostealgia is very commonly seen in syphilitic women, and appears in the form of headache, sternal pain, or pleurodynia. Syphilitic

secondary headache may simulate megrims, or be deep-seated or superficial. Pains in the joints are very common also (knees, elbows, and ankles). These pains are worse when the patient rests. Hydrarthrosis is occasionally the result of this affection of the joints. Such symptoms are, in numerous instances, taken for rheumatism of the articulations, and therefore treated erroneously. Dr. Fournier first of all pointed out that effusion into the sheaths of the tendons is rather frequent in secondary syphilis in women. The muscular tissue also frequently becomes affected, and pain, contraction, weakness, and atrophy of that tissue supervene. Trembling is the consequence of these affections of the muscles. Some women become greatly emaciated in the course of an attack of secondary syphilis, and seem to be twenty years older than before it. These symptoms are all greatly benefited by specific treatment, which often at once removes the supposed rheumatic attack, to the great delight of the patient. I have in many cases given relief in a few hours from pains that had been treated by colchicum and alkalies, etc., for weeks together.

In addition to the headache, insomnia, nervous weakness, and neuralgic affections, commonly enough witnessed in women during the secondary or eruptive period of syphilis, all of which are said to be more amenable to mercury than to iodide of potassium, especially the affections of the fifth cranial nerves, and of the occipital nerve, we must notice the occasional occurrence of syphilitic sciatica in the eruptive period, and intercostal, crural, and mammary neuralgiæ. All of these closely resemble ordinary neuralgic attacks, but are amenable to specific remedies. There is a curious fact in the history of secondary syphilis in some women, and that is, that they are occasionally found to have lost sensation in some part of the cutaneous envelope. Dr. A. Fournier, of Paris, first called attention to syphilitic analgesia in 1869, in the 'Annales de dermat. et de Syph.' There may occasionally be analgesia alone, and sometimes analgesia in company with anæsthesia. General in some rare cases, the analgesia of syphilitic women is more frequently partial, and confined, above all, to the backs of the hands, the skin over the mammary gland, and the cheeks. This analgesia is mostly superficial and symmetrical. It sometimes extends to the mucous membranes.

The cases of paralysis seen in the secondary period are very generally, and with few exceptions, partial, and con-

fined to one nerve, such as, for instance, facial paralysis, or paralysis of the fifth or sixth nerve. Facial paralysis is the commonest variety. Carefully treated by specifics, these palsies are *almost always* quite curable, *but not always.* Hemiplegia occurs occasionally in the eruptive period in women, even as early as the sixth month of the disease. In these cases there is, as a general rule, no apopleptic attack, but the paralysis comes on gradually, after a severe headache. This species of hemiplegia is generally amenable to specific treatment. Hysteria is occasionally awakened by the syphilitic intoxication in the secondary period. Epileptiform seizures are occasionally, although rarely, seen in this stage of the disease in women. Secondary syphilis often produces extreme coldness of the surface in female patients, and even *sensations* of great cold.

Jaundice occurs in very rare cases in the eruptive period of syphilis in females, sometimes at the same time with roseola. It usually disappears in a week or two. Its cause is not clear. Women are occasionally terribly debilitated by the effects of secondary syphilis, and may exhibit a great degree of cachexia and emaciation, reminding the observer of the appearance of patients with pulmonary phthisis. It is above all in cases of malignant syphilides that we see this, in rupia, ecthyma, or other intermediate forms of skin affections due to the poison. M. Ricord used to say that, of all cachexias, 'the best, or least inexorable,' is the syphilitic. Slight mercurial frictions, with iodide of potassium, is the treatment recommended by M. Ricord in these terrible cases, which, however, are not unfrequently fatal in my experience.

The generative system in women is greatly affected by the poison of syphilis. During the secondary period they suffer often from leucorrhœal discharges, which are, I have noticed, *for the most part* non-contagious, unless accompanied by some special syphilide. Probably, however, this leucorrhœa would, in some cases, prove contagious if directly inoculated on a healthy person. In a great number of women, syphilis, during the secondary period, has but little influence on the menstrual function; in others, it produces even total suppression, as I have frequently observed in the Rescue Society of London's hospital. In cases where there are malignant syphilides, the menstruation is often much affected. The cause of these menstrual troubles resides doubtless in the weakening of the health produced by the poison of syphilis. It has been alleged that secondary syphilis may produce

sterility; but, if so, this is a rare fact, since we see plenty of syphilitic women pregnant, and, alas! too many unfortunate syphilitic infants. As to the effect of secondary syphilis on pregnancy, that is clear enough. Locally, pregnancy disposes the patient to the outbreak of different syphilides, which are often very intractable. Pregnancy itself, too, has a tendency towards causing anæmia, and this, added to the poison of syphilis, is apt to produce great weakness, and even cachexia in some cases. Very frequently, indeed, the pregnancy does not run its full course, and the patient has an abortion or premature labour. Of 97 syphilitic pregnant women admitted into the Lourcine Hospital of Paris, the after history of 53 was known, and of these 53 no less than 25 aborted or had a premature birth, and 28 were delivered at full term. Small-pox is even more fatal to the life of the fœtus than syphilis; but the latter disease is one of the commonest causes of abortion. From the fourth month up to the end of the second year is the period in which syphilis causes the most premature births. In rarer cases, women may abort from syphilis even six years after infection. Grave forms of the disease are more apt to produce abortion; but it may occur even in the apparently mildest forms of the disease. It is now an uncontested fact that a woman who has syphilis before becoming pregnant is much more likely to abort than one who becomes infected during her pregnancy. Some unfortunate women have a long succession of abortions due to the virus of syphilis. I have seen cases where no healthy child was ever born; but five or six premature births or syphilitic infants had alone been produced. Specific treatment, carefully kept up, may render such women capable of having healthy children. As a general rule, women tend, in some three or four years, even when untreated, to give birth to healthy children. We shall return to this point.

CHAPTER IX.

DIAGNOSIS AND CAUSATION OF SYPHILIS.

In the tertiary period of syphilis, it is commonly said, the disease is no longer communicable; but there seems some vagueness in this assertion, since, as we have seen, women occasionally go on having syphilitic children for many years after any eruption on the skin, etc., has been noticed. In some cases, indeed, the secondary period passes quite unnoticed; so much so, that some authors seem to think that a good secondary eruption is rather a preservative against tertiaries. In a vast number of cases of syphilis, there are no tertiary symptoms; and, in some very rare cases, the hard sore even is followed by no symptoms. Malignant syphilis is occasionally seen, especially in infants, and also in adults. Recovery is the usual termination of syphilis in our days. Unfortunately, we possess no very good way of estimating when the disease is at an end; but the begetting of healthy children is a most important indication that contagious syphilis is at an end.

Bœck, in his learned work, 'Recherches sur la Syphilis,' seems inclined to lean to the idea that syphilis in the parents may lead to scrofula and other diseases in the offspring; and the author suspects that there is some grain of truth in this view, although Mr. J. Hutchinson seems to make out that actual syphilis in children is the only way in which the disease affects posterity. Some authors divide syphilis into common, benignant, and malignant. The last is a truly grave disease, and the chancre in such cases is not unfrequently phagedænic. Infancy, race, and unhealthy conditions of life, are frequently the antecedents of malignancy in syphilis. Virgin races are said to suffer much from malignant syphilis. Graves says that 'syphilis and the abuse of mercury are the two causes which most favour the

development of pulmonary phthisis.' The author is hardly able, in our days, to verify the dictum of Dr. Graves. Syphilitic patients, according to Chassagnac, are not very liable to pyæmia.

The diagnosis of syphilis, in obscure cases, resides in an *ensemble* of points. Gummy tumours are usually diagnostic, but not always. Frequent dead births or abortions are apt to suggest or indicate syphilis in one of the parents. Glanders and farcy have much resemblance to syphilis; and the author has, during an epidemic of variola, been in considerable difficulty sometimes in distinguishing between cases of modified small-pox and vesicular syphilide. In glanders, the Schneiderian membrane is attacked at an early period. Cases of chronic glanders have been certainly taken for tertiary syphilis. Elephantiasis of the Greeks shows soft tumours, like gummata, in the face, larynx, and pharynx; but it is said to be usually easily enough distinguished from syphilis, as the spots are of a dark red, not coppery, colour. Mercury may produce some, but very few, symptoms analogous to those seen in syphilis. Tertiary symptoms are not caused, although they were much aggravated, by the excessive mercurial poisoning of former years. Some writers speak of iodine as causing symptoms similar to those of syphilis. The author has, in rare cases, seen such symptoms produced by iodine or iodide of potassium. Iodide of potassium is every now and then a severe poison, and may cause universal eruption, and even death. This is most rare, however. Scrofula is sometimes very like syphilis, but is more apt to produce abscesses, and the scars after scrofulous ulcers are deep, uneven, bridled, and violet coloured; whilst in syphilis they are white, smooth, and more superficial. But, sometimes, it is very difficult to distinguish between tertiary disease and scrofula.

PROGNOSIS.

The prognosis in cases of *infantile syphilis* is undoubtedly very grave, whatever be the treatment adopted. Maternal syphilis is said by numbers of writers to be far more fatal to the fœtus than paternal. The author, however, agrees with Mr. Hutchinson in denying the validity of this assertion. Syphilis diminishes the number of births, and destroys the infant. Diday thinks that very indurated sores are followed by obstinate eruptions; and these, again, most

frequently, by tertiaries. But the author has not been able to verify, although he has attempted it, either of these assertions. It is, indeed, difficult to make any very good prophecy in these matters.

Dr. Taylor, of Boston, truly says that acquired syphilis in the young, *i.e.*, from eight to eighteen years of age, is not usually a severe disease. Persons with inherited syphilis do not seem to reach old age, and probably die of some disease of the liver or kidneys in middle life. Women and old persons usually suffer more from syphilis than young men do; and Dr. Paulet, of Paris, informed the author in 1867, that among the troops under his care he scarcely ever saw iritis or tertiary symptoms. M. Paulet did not use mercury, but only iodide of potassium. M. Ricord says, 'If you are to have syphilis, it is better to have it in youth, for in old age it is not a good thing to make its acquaintance.' Syphilis is, probably, just as severe now as it was in 1505, when Cataneus described it as a monstrous disease, 'which so attacked the human race, that any form of death was more to be chosen;' and, probably, syphilis was never more widely spread among the poorer classes than at present.

CAUSATION.

The virus of syphilis is not volatile, as in other diseases, but is probably contained in a fluid. This poison circulates with the blood—and 'rather in the blood corpuscles than in the serum,' says Lancereaux—during a certain undetermined time in a syphilitic person's history. Mr. Hutchinson, in the course of the debate upon syphilis on April 4th, 1876, at the Pathological Society of London, made the following very interesting remark: 'With regret, I admit that I have never seen with my outward eye the cryptogamic germ-poison of syphilis; but to my mind's eye, it is as certainly present as if I had. Someone will see it some day, for it is beyond doubt that it must be there. I would even venture to suggest that it might be wise to anticipate discovery a little further, and speak of the *syphilitic yeast*, so that we force our minds clearly to keep in view the possible developments of this theory, both as regards the inherited and the acquired disease.'

It was only in 1835 that modern writers were compelled to recognise that secondary symptoms were contagious, although ancient writers knew this very well. As a general

law, the products of diseased secretions in syphilis are only contagious if they are specific. It is not quite clear, for instance, that a soft sore on a syphilitic patient, even with secondary eruption, would cause syphilis in another non-syphilitic person. Mucous tubercles are the most contagious of all secondary eruptions, and then come pustular syphilitic skin diseases. Tertiary ulcers seem scarcely ever to be contagious. Dr. Bumstead, however, was not quite of this opinion. ('On Venereal Diseases,' p. 477.) Inoculation with the blood of patients with secondary eruption is now known to cause syphilis in healthy persons, since Dr. Waller, of Prague, on the 27th July, 1850, inoculated a boy, aged fifteen, with the blood of a woman affected with secondary eruptions. On the 31st of August, tubercles were observed at the inoculated point, and secondaries followed. (See Fournier, 'L'Incubation de la Syphilis.') Again, in 1862, Drs. Bargioni, Passiglia, and Rossi were inoculated on the 6th of February, and on March 3rd Dr. Bargioni had a papule, with hard base, and swollen glands in the axilla, which were followed by secondary eruption. The woman, with whose blood this courageous physician was thus inoculated, had mucous tubercles of the vulva. On the 3rd of March, a small papule, round in shape, and of a deep red colour, was seen on Dr. Bargioni's arm. On the 11th, it was covered with silvery scales; on the 14th, two glands in the axilla, the size of hazel nuts, appeared. On the 22nd, there was an ulcer, funnel-shaped, and nearly dry. On the 26th, the induration was well marked. On the 12th of April, there was roseola and enlarged cervical glands. This question is now settled.

There can be no doubt (and the author has seen several examples of the fact) that syphilis contracted by a pregnant woman is not always transmitted to the fœtus, although it is very difficult to say at what month this is usually likely to prove true; but, when the father has syphilis, and impregnates without infecting a healthy woman, does she ever become affected by means of the fœtus? Hutchinson has given some doubtful evidence of the latter fact; but many deny it. It is not clear that the milk of a syphilitic woman is ever virulent, and tears, saliva, or sweat, are, in all probability, free from poison—as inoculations made with these fluids have usually produced negative results—unless when any of them are mingled with secretion from mucous tubercles, or ulcers of a specific nature. Kissing is a frequent

source of contagion; and the author has seen many instances of indurated sores on the lips thus caused. Sleeping with persons affected with secondary eruption occasionally gives the disease. Examination of women in labour has, in some instances which have come under the author's notice, caused the disease in medical men and midwives. It is by no means very uncommon to see syphilis communicated either to or from the nursling. The author saw two cases of communication of syphilis from the nursling to the nurse in the course of one year at the Metropolitan Free Hospital of London. In one of the cases, the nursling infected two young women of a Jewish family, under the care of an able surgeon, Dr. D. Dyte. It has been remarked, and not yet contradicted, that syphilitic children who are suckled by their own, *apparently* healthy, mothers, do not contaminate them. Dr. A. Fournier showed the author (August, 1871) a nurse with an indurated sore on the breast. Cupping, tattooing, and catheterism of the urethra or Eustachian tube, have all been known to inoculate syphilis, and speculums and syringes are said to have often conveyed infection. Glass blowers are often infected from the mouth piece by their fellow workmen, and tobacco pipes and drinking-glasses have often been the vehicles of contagion. Sleeping in a bed recently tenanted by a syphilitic person is by no means safe.

VACCINAL SYPHILIS.

Owing mainly to political reasons, connected with the enforced vaccination of all children in Ireland, Scotland, and recently in England, a number of wild and unfounded charges have been made against the practice of vaccination altogether. The mass of medical men, knowing too well the terrible dangers which arise from neglect of this greatest of all prophylactic measures, have been until recently, in London at any rate, disposed to question the possibility of syphilis ever being communicated by means of vaccination. The author believes that such an occurrence is infinitely rare; but it would be to deny evidence altogether, were we now-a-days to dispute any longer the facts known to science in this matter. In 1841, a child near Cremona, of syphilitic parents, furnished lymph for sixty-four children, and most of these were infected. Of these, fifty-four recovered, and eight died. ('Cerioli Gazz. M. de Mil.,' October, 1843.) In Germany ('Med. Zeit.,' April 3, 1850) a veterinary sur-

geon vaccinated ten families, and nineteen out of twenty-four persons took syphilis. It seems, according to Viennois and H. Lee, that blood was mingled with the lymph in all of these cases.

In 1861, at Rivalta, near Turin, a child four months old was vaccinated with lymph from a tube, taken by a public officer at Acqui. Ten days after this, lymph was taken from the pustules on the child, and used to vaccinate forty-six children, all quite healthy. On June 12, seventeen other children were vaccinated from this lymph; and, of the sixty-three children vaccinated, not less than forty-six had syphilis, and twenty mothers or nurses were affected. Mr. Jonathan Hutchinson has (Medical and Chirurgical Society of London, Transactions, 1871, and *Doctor*, June, 1871) related two instances in which syphilis was communicated to adults from syphilitic infants. In the first instance, thirteen adults were vaccinated with the lymph from one child, and eleven of these had hard chancres, enlarged glands in the axilla, and other probable signs of syphilis. At a second meeting of the Society, Mr. Hutchinson mentioned cases brought before his notice by Dr. Lamprey and Dr. Tay. We may then say that the case has been fairly heard and proved; only remarking, as a caution to vaccinators, that it seems likely that the lymph, in such cases, has often been mingled with blood, and that the time for drawing off the lymph in Continental countries is too long (ten days). The lymph, it is to be noticed, is not contaminated with pus or blood on the eighth day, when vaccination should be performed from arm to arm, or points armed and tubes filled.

In many Continental cities, at the present time, the practice of animal vaccination has sprung up; and this will also be the case in this country ere long.

Hereditary Transmission.

Mr. Hutchinson of London is the greatest authority on this branch of the subject, and the author has often been able to verify that gentleman's inductions, in his own experience at the Moorfields Eye and Metropolitan Free Hospitals, which are classic ground, since many of Mr. Hutchinson's observations on syphilis were made there. Mr. Hutchinson (Reynolds' 'System of Medicine,' article Syphilis) says that from a fortnight to two months usually elapses before syphilis appears after birth. 'It is very

common for a man who has no syphilitic symptom of any kind, and appears in perfect health, to beget a syphilitic child.' He also says that, 'in all cases of constitutional syphilis—whether during the secondary or tertiary symptoms, or even during a protracted period of latency—an individual may become the parent of a tainted child. The degree of severity of the taint will be in proportion to the shortness of the period which has elapsed since the disease entered the system.'

In the course of the debate on syphilis at the Pathological Society of London, on April 4, 1876, he speaks thus: 'It becomes of great importance to answer the question—How long after the secondary stage is it possible for syphilis to be transmitted hereditarily? During the last few weeks I have gone through the notes of a great many cases, in order to get data for a safe reply on this head, and with the result of a strong impression that we have much exaggerated our estimates of the time. The cases in which syphilis is transmitted by inheritance for more than a year or two after its secondary stage appear to be very exceptional. I possess notes of a few in which successive children, during a period of seven or even ten years, have presented evidence of taint; but the ordinary course certainly seems to be that the first two or three children suffer, and that the others escape. Unless the risk of hereditary transmission did really cease early in the vast majority of instances, infantile syphilis would be far more common than it is. I have long made it a rule, when consulted on the question of marriage, to insist that, before marriage, a period of two years should elapse from the last of what I have considered blood-symptoms. I have given this opinion to a great many persons, and may confess that it has been a constant source of anxiety, lest some day someone should bring me a snuffling, spot-covered baby, and say: "See here, you said I might marry; just look at this!" Such an occurrence has, however, never yet happened to me.' A child, then, may inherit syphilis in a severe form from but one parent; from its father alone, or from its mother alone. 'When both parents are the subjects of syphilis, a child' (says Hutchinson) 'is more certain to suffer than when only one is so. We have no data, as yet, on which to ground an opinion as to whether a child is more likely to suffer less severely when its father is the source of contamination, than when it derives the disease from its mother, or the reverse. In a large proportion of

the cases met with in practice, the taint is derived from the father only.' Mr. Hutchinson also asks whether syphilis may not be transmitted to grandchildren.

Ascites from liver disease is not very uncommon in hereditary cases, according to the same observer. In children of syphilitic parents there is often diffuse stomatitis and interstitial corneitis, which have no parallel in the acquired disease. Deafness is not uncommon in inherited cases. The shape of the teeth resulting from stomatitis is figured in the article above referred to.

The author is quite convinced that Mr. Hutchinson has proved his point, as to the indications of inherited syphilis; although, in Germany, a few able oculists seem to refuse their assent to his conclusions. In numerous instances, the author has seen bone disease, ulcers, and disease of the trachea and larynx as the consequence of hereditary syphilis; and the Moorfields Ophthalmic Hospital out-patients cannot be watched for a month or two without the observer becoming convinced of the connection of various lesions of the eye and its appendages with this taint. Cataract, corneitis, and retinitis are all frequently seen in that hospital as parts of the history of inherited syphilis. 'Both parents,' says Fournier, 'should be interrogated, when a wife aborts frequently.'

Many excellent observers entirely refuse credence to the views held by Hutchinson and others, and above alluded to, as to the possibility of a woman bearing a syphilitic infant, unless she herself is contaminated. One of the most strenuous opponents of such a view was Cullerier, of Paris; and that author has many eminent followers in this opinion, among whom used to be counted Dr. Adam Owre, of Christiania, and many of the very best observers in Europe. Paracelsus writes, in 1536, '*transit a patre ad filium.*' Fallopius, in 1535, speaks of '*puerulos nascentes ex feminâ infectâ.*' Hunter denied that the disease was hereditary. Astruc recognised that the father might infect the fœtus, even if the mother were healthy, although more rarely than when she herself had syphilis. Swediaur relates a case in corroboration of this opinion. Diday ('Traité de la Syphilis des Nouveau-nés et des Enfants à la Mamelle,' Paris, 1854), gives cases to prove that a syphilitic father is alone necessary in many instances to the production of syphilitic children. Trousseau ('Union Med.' t. ii. p. 457, 1852) has given similar cases. On the other hand, Cullerier ('Mém. de la

Soc. de Chir.,' 1857, t. iv.), followed by Notta ('Archiv. de Méd.', 1860) and Charrier ('Archiv. de Méd.,' 1862), entirely and categorically denies that syphilitic infection of the fœtus by the father *ever* takes place, unless the father first *directly* infects the mother. The cases cited by Cullerier and others are most valuable, but are, of course, chiefly negative facts.

The author has been well aware of the controversy on this point for very many years, and has minutely examined all the mothers of syphilitic children that have come before him. The result of his observations has been to convince him, that some mothers of syphilitic children have never had apparently any symptom of having been themselves infected with the disease. Hence, on the principle of '*de non apparentibus, et de non existentibus, eadem est ratio*,' he does not quite see what right Cullerier and others have to say so positively that the mothers of syphilitic children *must* themselves be syphilitic, without showing that such women have always had some symptom of the disease. Lancereaux takes this view of the matter. The author is very anxious, however, to state his own opinion on this matter with becoming humility, since the question is much and very warmly disputed; but he must add that in his experience the *majority* of syphilitic children have syphilitic mothers.

Among other crucial cases, one was seen by the author in 1867. A woman brought a child suffering from interstitial corneitis, with pegged and notched teeth, and with a history of having been affected with eruptions and snuffles in infancy. The mother had no history of syphilis; but the father had suffered from eruptions, sore throat, and other symptoms of syphilis before marriage. Some years after this, the mother, having become separated from the father, contracted syphilis from another man, and was sent by the author, in 1871, to St. Bartholomew's Hospital, where she was under the care of Mr. Holmes Coote for roseola, mucous tubercles, sore throat, etc., for some time. Unless it be said that the woman might have contracted true syphilis twice, this seemed to the author a case of infection of the fœtus by the father alone.

Mr. Hutchinson's assertion, that the father *often* infects the mother by means of the fœtus, demands careful attention, coming as it does from such a man. Dr. Kassowitz (*Brit. Med. Jour.*, Feb. 5, 1876), mentions that in the years 1854–1868, 400 syphilitic children were admitted into the

Vienna Foundling Hospital. In these 400 cases it was found that 122 of the mothers were syphilitic, in 112 the mothers were unknown, and in 186 the mothers were healthy. In 76 of his own cases, 43 mothers of syphilitic children were non-syphilitic; in 23, both parents were syphilitic; in 10, the mother alone was so. The non-existence of syphilis in the healthy mothers was established by a careful watching of their health, continued over a period of years, and examination of the skin, throat, hair, glandular system, etc.

Dr. Kassowitz also observes that it is generally supposed that, if a pregnant woman is infected with syphilis after conception, the ovaries being previously healthy, the disease is communicated to the fœtus *in utero*. He denies this, and says that the syphilitic poison cannot pass from the maternal into the fœtal, nor from the fœtal into the maternal vessels. The syphilitic poison, then, differs from others in this respect, such as measles and small-pox. It is supposed to be contained in the formed elements of the blood alone, and some allege that experiment has proved that it is not communicable by the serum of the blood. Practically, the medical man will rarely be in error, if he assure any male patient who may have suffered from secondary syphilis some years previously that his children are likely to be quite healthy; but in one case a man with secondary eruption did certainly, in the author's experience, seem to infect his non-pregnant wife, six years after he had himself suffered from a hard sore. And if a female patient be treated when suffering from roseola or other secondary symptoms, the prognosis is often good *after the first child is born;* which, however, will in *very many instances* be an abortion or a dead birth. The author would be glad to be able to lay down with certainty, as some do, when a syphilitic father or mother could no longer have a syphilitic child; but he believes that perfect certainty on this important question is not yet arrived at. In variola the fœtus is *often*, but not *always*, found healthy after the death of the mother from confluent small-pox; and the word *never* is rarely admissible in questions relating to physiology.

CHAPTER X.

TREATMENT OF SYPHILIS.

THE course of syphilis is greatly influenced by certain drugs; and although, in many other diseases, a great number of physicians have become more or less votaries of what is styled *expectation*, it has been found that syphilis is a notable exception in many cases to the wholesome rule which enjoins us to 'Keep up the strength whilst repairs are going on.' Few persons of any clinical experience in the treatment of syphilis doubt for a moment the value of iodide of potassium in the treatment of tertiary ulcerations; but there is quite a chaos of opinions upon the question of whether mercury is useful in such cases, or in what doses it should be administered. The author himself for many years treated all cases of syphilis he met with, by means of the iodide of potassium combined with tincture of iodine, and without any form of mercury; but he is fully conscious of the amount of serious conviction concerning the utility of the latter drug in the minds of some of the ablest practitioners of the day in all countries. It will be his duty, therefore, impartially to examine into the evidence on both sides of the important question as to the treatment of syphilis with or without mercury.

In former days, mercury was much more used by physicians in all kinds of diseases than it is in London at present. It was given formerly in all acute inflammations of the various organs of the body. In Paris it has, for some years, been chiefly used in iritis and syphilis; but in Dublin, a few years ago, it was much used by men of great experience in almost every kind of disease. Samuel Cooper tells us that, 'when apprentice at Saint Bartholomew's Hospital, most of the venereal patients of that establishment were seen with their ulcerated tongues hanging out of their

mouths, their fauces prodigiously swelled, and the saliva flowing out in streams.' Ramsbotham is quoted by Copland in his Dictionary, p. 413, as mentioning a case where fifteen grains of blue pill, five grains each night, caused fatal salivation. Christison says, that 'two drachms of mercurial ointment, applied externally, caused violent ptyalism and death in four days.' Even the use of strong solution of corrosive sublimate in ringworm has lately proved fatal. The author has seen one or two cases somewhat similar to these in days gone by. M. Victor De Méric remarked, in his classical work on syphilis, 'I have given the iodide of mercury in hundreds of cases, in the Royal Free and German Hospitals, to out-patients who do not take especial care of themselves, and I do not recollect any case where the metal has caused any unpleasant symptoms.' He admitted, however, at the Admiralty Commission, that such patients were not unfrequently salivated. Strangulated hernia used to be treated after operation by doses of calomel. Does the practice still obtain? Ovariotomists leave their cases entirely without calomel after operation; so probably it is seldom used in hernia.

The treatment of iritis is deemed by Mr. Jonathan Hutchinson and others to demand mercury. Cases cited by Hugh Carmichael of Dublin, Dr. H. Williams of Boston, and, quite recently, by the late Mr. Zachariah Laurence, and by Mr. G. G. Gascoyen, seem to throw doubts on this point. The facts related by Mr. H. Carmichael clearly proved that many cases of syphilitic iritis recovered most completely under drachm doses of turpentine in almond emulsion. Dr. Hughes Bennett, too, says ('Principles of Medicine'), 'As to mercurials, the confident belief in their power of causing absorption of lymph by operating on the blood is not only opposed to sound theory, as formerly explained with regard to blood-letting, but is not supported by that experience which has been so confidently appealed to in its favour. They have been most praised in the treatment of serous membranes and iritis. But more careful observation has demonstrated that the moment these diseases are treated without mercury they are uninfluenced (except in certain cases for the worse) by the drug. Of sixty-four cases of iritis of every degree of severity, treated without mercury by Dr. H. Williams of Boston, the results, with four exceptions, which were neglected at the commencement, were good.' The late Mr. J. Z. Laurence, in an opening address

to the North London Medical Society, in 1863, p. 9, says:—'The second group of ophthalmias embraces the inflammations of the deeper structures of the eye. They are, as a rule, of a much more grave and dangerous character than those of the preceding group. These deep-seated inflammations are commonly treated by depletion, counter-irritation, and mercury. I treat them by the internal administration of opium, in combination with sedative local applications. I have published in the "Edinburgh Medical Journal," (Dec., 1862), a complete memoir on the subject, exhibiting the histories of twenty-nine cases thus treated, twenty-three of which were cured.' The late Mr. G. G. Gascoyen, although adhering to the use of mercury in syphilis, was opposed to its use in syphilitic iritis in most cases, as is shown by a paper read by him before the Royal Medico-Chirurgical Society of London in 1870. The learned and amiable Professor Bœck of Christiania treated all of his cases of syphilitic iritis with atropine locally, and Dr. Owre of the same city did the same. The author has usually found good results from this treatment, conjoined with blisters, and ten-grain doses of iodide of potassium. Adhesions seem to follow after any kind of treatment, in bad cases of syphilitic iritis, especially in elderly patients, and here the prognosis is often very bad, whatever treatment is employed.

It must be mentioned that Mr. Critchett is in favour of the use of mercury in such inflammations of the eye, in company with Mr. Jonathan Hutchinson; and as the author entertains the profoundest esteem for both of these most deservedly eminent men, he is most anxious to quote their opinion here. In his article on Syphilis, in Reynolds's 'System of Medicine,' before alluded to, Mr. Hutchinson says, 'If the iritis be allowed to proceed unchecked, it will in all probability end in obliteration of the pupil, either partial or complete. It will effect but little to use atropine, unless we use mercury also, for in many cases, during the acute stage of the inflammation, the pupil can scarcely be made to dilate until the lymph effused into the iris is in part absorbed. The longer the lymph is allowed to remain, the longer the inflammatory process is allowed to continue unchecked, the greater will be the risk of disorganisation of the structures implicated. These remarks apply with greater force to syphilitic retinitis than to iritis. That it is the bounden duty of the practitioner to administer specific remedies in these diseases, no one who has considered the

facts, can, I think, doubt.' Mr. John Couper of London has kindly informed the author, in conversation, that his treatment in all bad cases of syphilitic iritis is inunction in the axilla of mercurial ointment of about the size of a hazel nut, every night, for some weeks, and even months, in very obstinate cases, so as, not to salivate, but to make the gums a little sore. The atropine drop, four grains to the ounce, is dropped into the eye three or four times a day. It is only very mild cases of iritis that he treats with iodide of potassium, when there are only one or two nodules of lymph on the iris. In old persons, where the pupil is very irregular, the prognosis is bad; but in young persons it is usually good. Where adhesions are very extensive, he keeps up the atropine for several months, and thus breaks down the adhesions in time. 'It is not uncommon to see the retina' (says Mr. Hutchinson), 'in a case of severe retinitis, become almost clear after a fortnight's mercurial treatment, with corresponding benefit to the patient's vision. It is, on the other hand, very common to see the disease remain unchanged for several months, if mercurial treatment be not adopted.' After these remarks, he cites a case, in which a patient consulted Mr. Critchett, having undergone merely tonic treatment for some time. 'Mr. Critchett (the patient said) assured me that the fear of mercury was all nonsense, and that the only chance for my sight was at once to go home, keep myself in a warm room, and take mercury till the mouth was sore. This I determined to do, and the result was, that in the course of a week I could see very much better, and subsequently regained almost perfect sight.' After these parallel pieces of evidence, it is to be hoped that the question may ere long meet with the careful consideration it deserves. The same praise of mercury, be it remembered, used to be in vogue in pericarditis; but Gairdner, Habershon, and Hughes Bennett's writings have put it *out of practice* in this, as well as in peritonitis, pleurisy, and acute hydrocephalus. How difficult—is it not?—to arrive at a sound conclusion, with regard to the action of internal remedies, with the very best intentions. Of one fact we may be certain, and that is, that iritis may supervene whilst the patient's gums are sore from taking mercury for syphilis.

Treatment of Syphilis before 1812.

Celsus, in book vi. chap. xiii., speaks of ulcers found behind the foreskin, in cases of phymosis; and treats them, after circumcision, with lotions containing wine, turpentine, etc. He also advises the use of the actual cautery in phagedæna; but, as we believe that true syphilis did not exist in those days, it is hardly worth quoting farther from that great author. Dr. Meryon, in his 'History of Medicine,' says that, in some parts of Spain, where mercury was used in the fluxing of metals, it was discovered by chance that mercury was a specific for syphilis. It was used externally, as early as 1497; but Paracelsus first gave it internally, about the year 1570, as far as the author is able to judge. In 1754, Astruc, then physician to the King of France, wrote a work, in which we hear of Ulrich Von Hutten's case, who had been salivated eleven times for syphilis, and thus describes the process: 'He was hardly anointed, before he began to languish amazingly; and so great was the strength of the ointment, that it forced into the stomach whatever portion of the disease lay in the upper part of the body, in so violent a manner as to make the teeth drop out. The jaws, tongue, and palate were all of them ulcerated, and the gums swelled. The whole apartment stank, and the mode of cure was so hard to suffer, that a great many chose rather to die than submit to it. After all this, there was hardly one in a hundred cured by it.' Baron Von Swieten wrote his aphorisms, and gave the recipe for his famous solution of bichloride of mercury in alcohol, still used in Paris, in the 18th century. Hunter, in 1786, wrote his celebrated treatise, 'On the Venereal Disease.' In page 357, he says, 'Mercury in the lues venerea, as in the chancre, is the real specific; and hardly anything else is to be depended upon. If there be such a thing as a specific, mercury is one for the venereal disease, in two of its forms.'

Mr. Pearson of London, writing in 1800, shows how completely practitioners had at that epoch come to the conclusion that syphilis could never get well of its own accord. In page 47, he says: 'If credence may be given to men of eminence in the profession, this rigorous course of discipline is not necessary; for, according to Thierry de Héry, M. de Blegny, etc., the disease may terminate by a natural crisis, and is susceptible of a natural cure. The German peasant,

the Russian boor, the temperate Hindoo, the wretched African enchained in our West Indies, will no doubt furnish us with abundant instances, where the requisites of exposure of the body to the extremes of heat and cold, of scanty allowance and excessive fatigue, may all be found in full measure. Yet no proof can be brought that the powers of the constitution, aided by this sort of discipline, did ever effect the cure of the disease without the intervention of medical assistance.' Mr. Pearson adds that 'when mercury is under the direction of an unskilled man, the complaint will be generally exasperated by it, and rendered more intractable than if no mercury had been given.' In page 130, he says that after his appointment to the Lock Hospital, for two or three years, he noticed almost every year one or two deaths caused by mercury acting as a poison.

Evidence against Mercury in Syphilis, 1812-40.

One of the results of the British campaign in the Peninsula was the discovery that syphilis was often treated successfully in Portugal by simple hygiene and low diet. Dr. Fergusson, who was residing in Portugal, wrote a letter home, dated Evora, April 30th, 1812, which letter was read before a meeting of the Medico-Chirurgical Society of London, June 9th, 1812. He thus commences: 'Syphilis has excited much interest and altercation in this country on the part of all British medical observers, no less for its dreadful ravages among their own countrymen, than for its comparatively milder phenomena among the inhabitants of this country. In the British army it is probable that more men have sustained the most melancholy of all mutilations during the four years that it has been in Portugal, through this disease, than the registers of all the hospitals in England could produce for the last century; while venereal ulceration has not only been more intractable to the operation of mercury than under similar circumstances at home, but the constitution, while strongly under the influence of the remedy, has become afflicted with the secondary symptoms in a proportion that could not have been expected. With the natives, on the contrary, the disease is very mild; curable, for the most part, by topical treatment alone, or wearing itself out, when received into the constitution, after running a certain course (not always a destructive one) without the use of any

adequate mercurial treatment. I have now been upwards of ten years at the head of their hospital department, and can declare that it never occurred to me, amongst all the venereal patients whom in that time I have seen pass through the hospitals, to meet a single one under the influence of mercury, excepting those cases wherein I have personally superintended its administration. They go out cured by topical remedies alone, and I have lived long enough among them to ascertain that their return to hospital, under such circumstances, for secondary symptoms, is far from a universal or even a frequent occurrence.'

In a work entitled 'Observations on the Treatment of Syphilis, with several cases in which a Cure was effected without the use of Mercury,' by Thomas Rose, A.M., Baliol College, Oxon., Surgeon to the Coldstream Guards, read at the Medico-Chirurgical Society of London, January, 1817, Mr. Rose says ('Transactions,' vol. viii. p. 337), 'Lastly, I have tried the same system in the Coldstream regiment of Guards, during the last year and three-quarters, and have constantly succeeded in curing all the ulcers on the parts of generation which I have met with, with the constitutional disorders to which they gave rise, without the exhibition of mercury. . . . Mr. Abernethy inquired, he tells us, of the best surgeons in London, whether constitutional symptoms of syphilis do ever spontaneously amend. No one decidedly replied in the affirmative.' Mr. Berkeley Hill, in his classical work on syphilis, mentions that Mr. Rose, and also Dr. J. Thomson, in after years returned to the use of mercury in small doses in true syphilis.

In 'Observations on the Treatment of the Venereal Disease without Mercury,' by G. J. Guthrie, Esq., read at the Medico-Chirurgical Society, London, January, 1817, the author remarks, 'On the continent, in general, little attention is paid to the appearance of primary sores; but this does not lead in general, in Italy, or in the north of Europe, to the exhibition of mercury or any other specific; and Mr. Cullerier, the first surgeon in the Venereal Hospital in Paris, demonstrates the possibility that every kind of ulcer is curable by common means.'

In the 'Edinburgh Medical and Surgical Journal,' January, 1818, appeared, 'Observations on the Treatment of Syphilis, by John Thomson, M.D., Professor of Surgery to the Royal College of Surgeons of Edinburgh, and Surgeon to the Forces.' John Thomson was, it appears, appointed in

1816 to the care of the depôt in Edinburgh. 'In this hospital,' he says, 'open to the inspection of all the medical military officers attending the University, I have, since that period, carefully abstained from the use of mercury, not only in treatment of secondary, but also in that of the primary symptoms of syphilis; and have found that chancres and buboes have in every instance disappeared under an antiphlogistic regimen, rest in the horizontal position, and mild local applications, as rapidly as when mercury was employed.'

In the year 1818 Dr. Hennen, Surgeon of the Forces, read a paper, which is to be found in the 'Edinburgh Medical and Surgical Journal' of 1818. He there mentions that primary and also secondary syphilitic lesions had recovered under his care without any mercury. He gives a table of the cases treated and the results obtained, from which it seems, that of the four hundred and seven cases treated, iritis occurred only in one; exostosis in one; secondary symptoms in forty-six, some of them slight, and all healing in from ten days up to eighty days. This tallies with the experience of Dr. Paulet, of the Val-de-Grâce Hospital of Paris, among healthy troops. (Oral communication.) Dr. Hennen gives the average time for the cure of primaries, without bubo, as twenty-one days; with bubo, forty-five days; and for secondary symptoms, from twenty-eight to forty-five days; and adds, that the appearances most often observed in non-mercurial treatment were the return of the primary sore, and repeated attacks of the eruption. In p. 567, he says, 'Notwithstanding Dr. Hamilton's opinions to the contrary, so strongly expressed in his work, we have reason to believe that children have recovered from the disease, not merely without mercury, but spontaneously, and without any remedy whatever. And Mahon, in his 'Œuvres Posthumes,' p. 416, says, 'On ne peut nier, cependant, qu'il ne puisse arriver, que les symptômes vénériens disparaissent chez les enfans nouveau nés, à qui on n'a fait aucun remède. J'en ai eu plusieurs exemples.'

In a 'Memoire sur le Traitement sans Mercure, employé à l'Hôpital Militaire d'Instruction du Val-de-Grâce, par M. Desruelles, Chirurgien Aide-Major, Chargé de la Direction des Services des Vénériens à l'Hôpital du Val-de-Grâce' (Paris, 1828), in the 'Journal des Progrès des Sciences Medicales,' it appears that M. Desruelles was entrusted, in the year 1825, with the charge of the venereal patients at the military hospital of the Val-de-Grâce. He was not long in

perceiving that simple dressings, and, in the greater number of cases, scrupulous cleanliness, advantageously replaced the ointments, the powders, and the irritating lotions, and that the employment of simple antiphlogistics, in moderation, hastened, much more than the means hitherto adopted, the cure of venereal symptoms. At the same time, it was unconsciously, and driven by the evidence of facts, that he arrived at banishing the drug from his treatment, which had formerly entirely constituted it.'

In a work entitled 'Cours de Pathologie,' par F. Broussais (Paris, 1831), vol. iv. p. 243, the renowned author says, speaking of Desruelles, 'For seven or eight years past, syphilitic patients have been treated at the Val-de-Grâce without mercury. All the cures are not indeed radical, and some are followed by relapses. But those obtained by the exclusive mercurial treatment used in the other hospitals, besides being less speedy, present still more relapses. The advantage then remains with the treatment without mercury.'

Dr. Fricke is a surgeon whose name is well-known both in Germany and France. In a work entitled 'Annalen der Chirurgischen Abtheilung des Algemeinen Krankenhauses, in Hamburg, von E. G. Fricke, Doctor' (Hamburg, 1828), there is a most detailed account of this gentleman's experiments. 'The treatment of syphilis in the Hamburg Hospital was divided into two epochs,' says Fricke, 'the mercurial period and the non-mercurial. The former period was, for males, eighteen and a half months, from January, 1824, to July, 1825; and for females, twenty-one months, from January, 1824, to October, 1825. The non-mercurial period lasted, with males, two years and five and a half months; and with females, two years and two months.'

Second Period; Treatment of Syphilis without Mercury.—'When this mode of treatment' (says the editor) 'was introduced into our wards by Dr. Fricke, he at first submitted only a small number of patients to it, and chiefly selected those whose future prospects did not depend on their being cured in the speediest way. Having afterwards discovered, contrary to his expectations, that the disease was cured more rapidly in this way, and relapses much fewer and slighter, it was extended to all cases, with such modifications as experience suggested. At this time, February, 1828, after a trial of two years and a-half, and the successful treatment of more than a thousand patients, the results of this treatment have proved so favourable that there appears no reason

for lightly abandoning it, or returning to the former plan of treatment.' In some cases cited by Dr. Fricke, death seems to have been rapidly caused by the use of inunction. The following condensed cases may illustrate this :—Anna C. was, in 1824-25, for fourteen months in hospital for ulcers and scrofulous disposition. She used inunction, and left uncured. In February, 1827, had dropsy and died. Catherine S., age twenty-eight, entered July, 1824. Had taken much mercury. Was anointed with mercury, and died suddenly after the fifth inunction. Sophia B., age twenty-four. Had from May to August, 1824, taken mercury for primary sore. In October, 1825, was anointed. After twelve inunctions, died with universal dropsy. Christina M., age twenty-one. June to November, 1827. Treated with mercury for syphilis, and died five months after of a hectic fever. Dr. Fricke's just quoted observations appeared in 1828 ; and Dr. Graves, in a lecture delivered in Dublin in 1838, 'Clinical Medicine, vol. ii. p. 430, says, 'As ten years have elapsed during which Dr. Fricke has continued to conduct the treatment in the Hamburg Hospital, I took the liberty of writing to him, for the purpose of ascertaining whether subsequent experience had induced him to alter his views. His answer was, that instead of altering his views, experience had confirmed them.' And in p. 431, 'Dr. Fricke has had no reason to abandon his new method of treatment ; on the contrary, further experience has not only confirmed his previous observations in every instance, but also a series of cases, now amounting to several thousands, have forced upon him the conviction of superior efficacy of what has been called the antiphlogistic treatment.' Dr. Desruelles mentions that Dr. Fricke had treated fifteen thousand cases.

CHAPTER XI.

RECENT OPINIONS ON THE TREATMENT OF SYPHILIS.

ABOUT the year 1838, M. Ricord obtained by competition the post of Surgeon to the Hôpital du Midi of Paris. M. Ricord divides ulcers into simple, inflammatory, phagedænic, and indurated. With regard to the first three varieties, he holds the views of Desruelles, Fricke, and others, and admits that they are better treated without mercury; requiring rest, topical applications, and aperients alone. He insists, with Hennen and Fergusson, on the fact that alcohol is frequently a cause of phagedæna. He used to be in favour of cautery as a prophylactic against infection of the soft chancre; but, of late years, having become a believer in the dualist doctrines of his eminent pupil, Dr. Bassereau, he only uses caustic in such cases to cause the soft sore to heal quickly. He acknowledges that indurated sores heal very well without mercury; but when he 'has before him an indurated chancre, he has recourse, as soon as possible, to a specific medication, that is to say, to a mercurial treatment.' He is opposed to salivation, but says, 'Six months of treatment, with a daily dose, which influences the accidents we have to combat, and which indicates, after disappearance, that the remedy still acts, by its well-known physiological effects: followed by a three months' treatment by iodide of potassium, destined to prevent the manifestations of the distant affections of the diathesis; such is the course of treatment which is attended by the happiest results, and which is followed in the great majority of cases, by the complete neutralisation of the poisonous virus.'—('Lettres sur la Syphilis.') He gives the proto-iodide of mercury in doses of one, two, or three grains per diem, in pills; and then large doses of iodide of potassium, fifteen, twenty, sixty, or even more grains per diem. In a visit to the British

Medical Association some years ago, he repeated his opinion on this point.

Mr. Syme, the late illustrious head of the Edinburgh School of Surgery, speaking of this 'modified' mercurial school, alleges in his 'Principles of Surgery,' that it 'injures the health no less effectually, than the process of poisoning which it professes to have so advantageously replaced,' as he can testify from cases he has seen.

M. Ricord says with regard to *iodide of potassium* (*loco citato*): 'Thus I may say, that the iodide of potassium, at first advised as a general remedy for syphilis, and which gave such uncertain therapeutic results, has been definitely, by my clinical studies, reserved for that series of accidents named tertiaries, *on which the action is all powerful.*'

Dr. Robert McDonnell, in his masterly lectures on venereal diseases, Dublin, 1868, says, 'As students of the Irish School of Medicine you may look, gentlemen, with very just pride, to what has been done in this department by practitioners of Dublin. To Wallace we owe the introduction of iodide of potassium as an anti-syphilitic agent. Lancereaux (in his great work on 'Syphilis') also says, that in 1831 Lugol published cases of tertiary syphilis cured by preparations of iodide alone. Wallace, of Dublin, had the merit of first employing iodide of potassium, of fixing its doses, and pointing out the indications for it, whereby he definitely introduced iodine into the therapeutics of syphilis, and placed it almost on a level with mercury. He commenced in 1832, and gave the results in the *Lancet* of March, 1836; one hundred and thirty-nine patients were observed, of whom six had iritis; six, affections of the testes; ten, diseases of the bones and joints; ninety-seven, syphilides; twenty, affections of the mucous membrane; and three pregnant women were treated for the purpose of freeing the fœtus from syphilitic contagion. The preparation employed, *Mistura Potassæ Hydriodatis*, contained eight parts of the salt to two hundred and fifty of water. Adults took half an ounce four times a day, or about thirty grains of iodide in the twenty-four hours.

The late Mr. Syme, in his 'Principles of Surgery,' says, that very different amounts of mercury were found to produce the bad effects seen so frequently in former days. Scrofulous persons and those who had already taken much mercury, fell easy victims to this treatment. He usually treated primary sores locally by nitrate of silver, as soon as

possible after the appearance of the disease, and then by black wash or sulphate of copper lotion. For phagedæna, he recommended bread and water poultices at first; and, subsequently, a strong solution of sulphate of copper (a scruple to the ounce), also leeches, and opium fomentations, with aperients. In mercurial sloughing, he used caustic potash applications. 'If secondary symptoms appear, they should be treated,' says Syme, 'merely by the ordinary principles which guide the practice in regard to them when arising from other causes. In affections of the skin and throat, it is much better to abstain from mercury altogether, and either trust entirely to local means, together with suitable regimen, or to employ iodine in some of the forms in which it is usually prescribed. In affections of the periosteum and bones, iodine is also found generally useful, the appropriate local treatment, and especially the regulated application of blisters being at the same time employed.'

Mr. Syme recommended two grains of iodide of potassium in water, thrice a day, for such affections. Sir James Paget, too, seems to consider this quantity sufficient; but many authors think that much larger doses of iodine are required.

The late Dr. Hughes Bennett, in his standard work entitled 'Principles and Practice of Medicine,' was a bitter opponent of mercury in the treatment of all kinds of diseases; but more especially in the case of syphilis. One of the expressions made use of in that work, in page 499, is as follows: 'The idea that mercury is a specific for the syphilitic poison, and the incalculable mischief it has occasioned, will constitute a curious episode in the history of medicine at some future day.' After adverting to the gratitude which the world owes to Drs. W. Fergusson, Hennen, J. Thomson, and others, Dr. H. Bennett adds, 'In England, the Hunterian theory and practice has been deeply rooted; and in Ireland, has been supported by the writings of Carmichael and Colles. Mercury in consequence is still very generally employed in these parts of the kingdom. The gigantic experiments made abroad, ought to convince the most sceptical. If not, let them compare what syphilis is in Scotland, with what it was.'

In a most laborious and elaborate work, by Professor Bœck of Christiania, entitled 'Recherches sur la Syphilis,' there is a detailed account of the treatment of syphilis in Norway, with mercury, without mercury, and by means of syphilisation. It seems that in the Christiania Hospital,

there were three hundred and forty-eight males and one hundred females treated by Hahnemann's soluble mercury; three hundred and eighty-five males and eighty-one females were treated by calomel; forty-six males and twenty females were treated by proto-iodide of mercury; one hundred and forty-nine cases were treated by Epsom salts and topical remedies; twenty-two cases by iodide of potassium; and three hundred and forty-four cases were treated by external remedies. Professor Bœck wished to see whether any treatment was capable of preventing secondary symptoms. In one thousand and eight cases treated by mercury, two hundred and forty-two, or twenty-four per cent., became affected; and in five hundred and twenty-two treated without it, seventy-seven, or fourteen per cent., became affected.

At a meeting of the Royal Medical and Chirurgical Society of London, February 10th, 1863, reported in the *Medical Times and Gazette*, Mr. Spencer Wells is reported to have said, how that reports show, 'not only that mercury is no preservative from secondary symptoms, but that it actually retards the cure of the common, or non-indurated sore, although it hastens the healing of the indurated sore, or true Hunterian chancre. And they prove, not only that mercury is no preservative of secondary symptoms, but that the frequency and severity of the secondary symptoms are increased in direct proportion to the quantity of mercury; and that many of the more formidable varieties of tertiary disease are caused, not by syphilis, but by mercury. The true use of mercury is, in small quantities, in the treatment of the primary indurated sore, and in some forms of secondary disease.'

Dr. Diday, of Lyons, in his work on the 'Natural History of Syphilis' (Paris, 1863), says, 'I have seen syphilis, though treated methodically by specifics, last for a long time, give rise to after affections of the skin, to iritis, disease of the testicle, and then to the so-called tertiary affections, relapse under this form almost indefinitely; and even though the disease was apparently cured, a tendency to the generation of infected children remain. I call this state of matters severe syphilis. On the contrary, and more frequently, I have seen syphilis, though treated without specifics, limit itself to superficial lesions, to two or three crops of cutaneous eruptions (the severity of which gradually diminishes), the health being then completely re-established, as proved by the procreation of healthy children. I call this state mild

syphilis.' Further on, he says, 'I impute to mercury positively, and on sufficient clinical evidence, the following disadvantages: (1) Rendering the ulcer phagedænic; (2) Occasioning stomatitis and necrosis of the alveolar borders; (3) An acute affection of the gastro-intestinal canal and dyspepsia; (4) Trembling of the extremities; (5) Apoplexy (this is rare); (6) Insanity. All these accidents I have seen supervene, as the results of treatment ordered and superintended by most competent and most attentive practitioners. As, moreover, I have seen syphilis, when treated without mercury, in general recover: and as I have collected numerous observations, where the persistence of the cure has been observed at the end of four, five, six, or seven, and even fourteen years, I believe that I act in the interest of my patients, in not prescribing mercury indiscriminately in every case.'

In the month of August, 1863, the author, being on a visit to Paris, took the opportunity of ascertaining the views of some of the leading physicians and surgeons of that city on the question of using mercury in syphilis. The late Dr. Cullerier, he found, was well acquainted with the fact, that cases of syphilis frequently did very well without mercury. Dr. Alfred Fournier at that time told the author, that he waited till the roseola disappeared before giving mercury in syphilis; but Dr. Cazenave treated gonorrhœa and all kinds of sores by small doses of mercury. Dr. Hardy, too, was a strong advocate of mercury in syphilis. In the autumn of 1866, after long and interesting discussions in the Harveian Society of London, in which the author enjoyed the inestimable benefit of the criticism of Messrs. V. de Méric, H. Lee, James Lane, G. Gascoyen, Weeden Cooke, and other leading London authorities on this important point, on another visit to Paris he found that Dr. Paulet, surgeon and professor of anatomy in the Val-de-Grâce Hospital, was a strenuous supporter of the non-mercurial treatment of syphilis. In a short letter to the author in 1867, at the time of the *International Congress of Paris*, M. Paulet writes, 'I have commenced, since 1862, a series of researches upon the comparative value of different mercurial remedies, and of expectation, in cases of syphilis (in the army), at all periods of the disease; and up to this date (1867) I have noticed no very appreciable difference in the results. As to whether syphilis is capable of being cured perfectly, I lay it down as a principle that it is impos-

sible to decide anything on this point until we have followed a sufficient number of patients for ten years at least. This is what I am undertaking.' This note was read by the author before the Congress, in 1867, M. Ricord being President at the time. In 1877, Dr. Paulet was of the same opinion.

The year of the Congress, 1867, was signalised by an interesting discussion in the Parisian Société de Chirurgie (*Gaz. des Hop.*, 1867). The late *M. Dolbeau*, surgeon to the Lourcine Hospital of Paris, in the course of an opening address, said: 'Must we follow any specific treatment when roseola, mucous plates, etc., appear? Must we give mercury? This is probably the practice of all of you; but it is no longer mine. When I count the numerous observations of non-treated syphilis, which daily present themselves at the latter period of their evolution, I would speak of these tertiary accidents, *which we cure so easily with iodide of potassium*, although the patients have never submitted to any mercurial treatment, and when, finally, I pass through my mind the numerous cases of relapse which I have observed after the most careful treatments, I ask myself, of what use is mercurial treatment?'

M. Deprés, surgeon to the Lourcine Hospital, shared the opinion of M. Dolbeau. He asserted that patients treated for syphilis with tonics and local means had not returned in greater numbers with relapses than those treated with mercury by Drs. Jaccoud, Panas, etc. Also, that patients had entered hospital with relapses, after taking two hundred and fifty to three hundred pills of proto-iodide of mercury. The late *Dr. Cullerier* explained that he did not treat the chancre with mercury, but commenced with Van Swieten's liquid (see formulæ) when secondary eruptions came on. 'In private practice many patients would not always take mercury,' he added, 'and yet got well.' *M. Lefort*, at that time surgeon to the Hôpital du Midi, said that he had tried non-mercurial treatment; but the results had been so bad, that he dared not go on with his experiments. *M. Dolbeau*, being called on by the President, reiterated his conviction that mercury did not prevent the appearance of either secondary or tertiary accidents; that iodide of potassium was a remedy, for the most part of inestimable value, in the tertiary period; and that the action of iodide of potassium is not in any way aided by its admixture with any form of mercury. *M. Maurice Perrin* mentioned that the contem-

poraries of Desruelles had corroborated how that surgeon had succeeded better by non-mercurial treatment than others by using mercury. 'To submit,' he said, 'without motive, and as if by routine, to the use of an energetic agent, such as mercury, the numerous tribe of syphilitic patients, is this not systematically to enfeeble the individual, and perhaps introduce a real cause of degeneration among the masses?' He then detailed an experiment he had made in the Val-de-Grâce Hospital in 1858, with and without mercury, which resulted in making him say that mercury does not modify the progress of syphilis, or put off the epoch of ulterior syphilis.

M. Verneuil, in the meeting of 8th May, 1867, expressed himself in favour of mercury in syphilis, where there is iritis, periostitis, alopecia, or persistent headache. He believed in the preventive efficacy of mercury in tertiary accidents, saying that the majority of patients with tertiary lesions had not had enough of it. Moreover, he asserted that iodide of potassium very often modified tertiary symptoms, but not always. Iodide of potassium, in a certain number of cases, does not succeed at all, and sometimes cannot be tolerated; but he granted that it is *generally* very well tolerated, but does not prevent relapses supervening. Mercury it is true, does not absolutely prevent the development of secondaries; but he believed they were less severe when it was used. The cure of syphilis required about a year and a half, said M. Verneuil, when the successive outbreaks are treated by mercury. Syphilitic headache, iritis, and amblyopia, all are benefited greatly by mercury. The late *M. Velpeau* was convinced that syphilis got well of itself pretty often; but that mercury was often needed to arrive at a good result. He said that in order that iodide of potassium should be efficacious in syphilis, it must have been preceded by a course of mercury.

M. Deprés brought forward a number of statistics, to prove that patients at the Hôpital Saint Louis, with tertiary symptoms, had usually been vigorously treated by mercury. He adverted to the fact, that most French medical men objected to mercury in tertiary cases, whilst Virchow said that these were precisely the cases in which it should be used. In malignant syphilis, few persons give any mercury; but rather tonics and iodide of potassium. Speaking of Dr. Depaul's account of an epidemic of vaccino-syphilis at Morbihan, in 1866, he observed that the children treated there

without mercury seemed to do better than those treated by mercury. Deprés was not disposed to admit that mercury in any way prevents iritis. Mercury has long been considered a debilitant and a poison, and M. Deprés said in conclusion, 'If I had syphilis, I would not take mercury.' Mercury, he added, causes an aggravation of syphilis, and is given by routine.

M. Depaul stated in the debate, that in syphilitic women, if mercury be given, the pregnancy which otherwise would have ended in abortion often continues its course, and thus he had seen women bring living children into the world, after having had two, three, or even five miscarriages. He also advised the use of mercury in syphilitic children, saying that it acts in a marvellous manner in such cases. 'Five years ago,' said Depaul, 'in consequence of an unfortunate vaccination, seven infants were infected; all were treated for six weeks or two months, and all were cured; since then, two have succumbed to intercurrent diseases.' *M. Panas* said he did not think, from his experiments, that mercury in any way retarded secondary manifestations from appearing, although he had used iodide of mercury thirty days before they appeared. *M. Deprés* observed that he had cured many cases of syphilitic iritis without mercury, by leeches and blisters, and had only had relapses when he could not prevent synechiæ by prolonged dilatation of the pupil by atropine. He cited facts from the Lourcine Hospital, to show that mercury does *not* prevent abortion in pregnant women.

M. Diday, of Lyons, observed that mercury does not prevent secondary symptoms; but it is of use in making these milder, although it does not prevent relapses, or destroy the diathesis. Children of syphilitic parents are, as a rule, less and less likely to be affected, as time goes on. He gives no mercury for indurated sores, or for secondary eruptions, if they are slight; but if there are squamæ and pustules, he gives it. He gives it also in iritis, onyxis, and dysphonia; but not in palmar psoriasis or mucous tubercles, because it is of no use in these. He continues, for eight to ten days at a time, to give a grain and a half of proto-iodide of mercury daily, and rubs in mercurial ointment each day, until the gums are touched. Then he leaves off the mercury for a time, and resumes it again. Syphilis is not contagious in the tertiary period. Iodine is only a very excellent palliative for tertiary disease.

M. Deprés brought forward more cases from the Saint Louis Hospital, to prove that persons with tertiary syphilis had usually taken plenty of mercury, and mentioned two cases of syphilitic infants treated with mercury, one of which died, and the other was reduced to extreme emaciation on leaving the hospital. Also three women, who had not taken mercury, were syphilitic, and had living and healthy children. This interesting debate will doubtless do much to clear up the obscure points in the treatment of this very important disease.

Syphilisation.

The medical world in all countries was some years ago much interested in the experiments which took place in Norway, on the treatment of syphilis. A short time after Dr. Bœck commenced practising syphilisation in Christiania, (according to Dr. Heiberg in a small pamphlet written in 1868, at Christiania), the French Academy's decision almost proscribed syphilisation in Paris. Bœck for some years, it seems, took pus only from hard sores to syphilise with, irritating the hard ulcers with savine ointment. Generally the inoculation (according to Bidenkap), gives a re-inoculable pustule, without incubation. Every three days, inoculations (with six inoculation points) were made on the sides of the chest; afterwards on the arms, and, finally, on the thighs, until no more pustules would arise, which, it was said, usually took place after thirty generations of pustules. In persons suffering from syphilitic cachexia, the pustules sometimes would not appear for some time; perhaps several weeks, in some cases. Some persons were quite refractory to all inoculations, although inoculated every day. After two months or so of syphilisation, the different symptoms of constitutional syphilis were wont to disappear; eruptions vanished, and ulcers of the mouth got well. Iritis required no peculiar treatment, except dilatation of the pupil by atropine, to prevent adhesions. Tertiary symptoms were much ameliorated, and required only a little iodide of potassium to make them heal entirely; but bony tumours were rarely absorbed. Mucous tubercles were obstinate. The health improved during syphilisation; but relapses in symptoms were frequent, if the process were not continued till no more pustules could be raised. When mercury had been used, it required longer time and more trouble to conquer the disease.

In newly born children, syphilisation did not succeed at all, unless when practised daily; and even then, not for a fortnight, nor can it usually be carried on as in adults, or do so much good.

A lively discussion took place in Christiania (Norsk. Med. Arch., 2 Hft., 1869) in 1869, at the Medical Society, on the subject of syphilisation, after the visit of Dr. Bœck to London, and after the report made by Messrs. Lane and Gascoyen on his experiments at the Medical and Chirurgical Society, in 1866. Messrs. Lane and G. Gascoyen, in a report to the Royal Medical and Chirurgical Society of London, in 1868, say with regard to syphilisation, 'Differing as we do on the scientific aspect of the question, we are entirely in accord as to its practical bearings, and we are decidedly of opinion that syphilisation is not a treatment which can be recommended for adoption. We consider that, even if it could be admitted to possess all the advantages claimed for it by its advocates over other modes of treatment, or in many instances no treatment at all, it would not sufficiently compensate for its tediousness, painfulness, and the life-long marking which it entails on the patient.' The author's most esteemed and eminent friend, Dr. R. Mc-Donnell, mentions in his pamphlet 'On Venereal Diseases,' (Dublin, 1870), that Auzias-Turenne, in 1845, originated syphilisation; but was not allowed to make use of it. Sperino, Robert of Marseilles, and Bœck carried out Auzias' idea. The author is not of opinion, from his own personal experience, that syphilisation is likely again to be used in syphilis.

Among the Minutes of Evidence of the Admiralty Commission of 1865, are some most interesting opinions of our most eminent London writers on syphilis, as to treatment, which are, we think, worth reproducing here. The late *Mr. W. Acton* said that mercury removes the induration of the hard chancre, and he was 'sure that mercury gives an exemption from secondary symptoms.' It takes from three to six months of mercurial treatment to cure an indurated sore. Many persons thus treated have secondary symptoms and relapses. The late *Mr. Langston Parker* did not think that treatment by mercury gave any exemption from secondary symptoms; but he gave mercury sometimes to heal the hard sore, which resists all other treatment. The dry and scaly eruptions almost invariably yield to mercury; but the pustular do not so certainly. In the pustular and tuber-

cular forms of syphilis, he thought the iodides with bark were most useful. The scaly forms relapse four or five times, and then disappear with or without mercury. In infantile syphilis he rubbed in mercurial ointment on the soles of the feet. This was very successful; 'as a rule they get well.' The virtues of iodide of potassium, he thought, have been over-rated. He had no faith in sarsaparilla.

Mr. Jonathan Hutchinson at that time treated indurated sores with mercury; but had left it off for two years at the Metropolitan Free Hospital. He should not say it exercised much influence on the constitutional symptoms. He treated secondary symptoms by doses of one-eighth of a grain of bichloride of mercury twice a day, making the gums sore twice or thrice during the treatment. Iodide of potassium was more efficient than mercury in the tertiary period; but it did not prevent relapses. The tertiary stage is absent in perhaps the majority of cases of syphilis. Mercury shortens the stages, which is of great importance where the eye is concerned. Mercury is not of much use in hereditary interstitial corneitis. Iodide of potassium is useful, even when mercury has not been given. Iritis and retinitis are curable; they clear away even in hereditary cases. Not one in fifty of them cause permanent blindness. Has seen severe bone disease in patients who have taken mercury for syphilis, as well as in those who have not taken it. Since that evidence was given, Mr. Jonathan Hutchinson has stated, that he considers mercury a specific in syphilis, capable of preventing the appearance of secondary symptoms, and useful in all periods where the specific action of the virus is active.

Mr. Solly thought, that in one case out of fifty mercury would prevent the coming on of secondaries. He gave five weeks of mercury for the chancre, and six weeks of it for secondary eruption. The late *Mr. V. De Méric* gave mercury when the primary sore was truly indurated, and kept it up for weeks or months, if the patient would allow him. Mercury did not prevent the appearance of secondaries. He gave a grain of iodide of mercury twice or thrice daily. The results of non-mercurial treatment, he heard, were not bad in France. He treated phagedæna by nitric acid locally. Patients in hospital practice were sometimes much salivated by mercurial treatment, and he used hydrochloric acid in such cases to the ulcerated gums. *Mr. Holmes Coote* said, that in his male ward at Saint Bartholomew's, no mercury had been given for many months; it was chiefly given there

for secondary symptoms. He used concentrated nitric acid, containing one-third of water, as an escharotic. Gave two and a half grains of mercury with chalk twice a day for secondary symptoms. Thought iodide of potassium very valuable in tertiary syphilis.

The late *Professor Bœck* thought that after syphilisation mothers had healthy children sooner than when mercury was given; in the latter case, we are never sure that a woman will have a healthy child. Three months and a half is the average time taken by syphilisation, and he was perfectly satisfied as to the value of this method of treatment. Patients in Christiania were never treated by mercury. Cured iritis by syphilisation alone. *Dr. P. Heron Watson* treated by expectation or syphilisation. Formerly used mercury. He was a *dualist*, and used syphilisation, like a seton, as a derivative. Mercury did not cure tertiary symptoms; but iodide of potassium checked them for a time. Syphilisation was the most satisfactory treatment in such cases. Syphilis usually, if left alone, comes to an end with the roseolar eruption. He seemed to think, that iodide of potassium in secondary symptoms is more likely to cause tertiaries than if the disease were only locally treated. He treated indurated sores locally. Had found iodide of potassium of great service in tertiary syphilis; but it lowers the constitution. Found no objection to syphilisation among his richer patients.

Sir James Paget thought that mercury was a specific in syphilis; it would shorten its duration, and sometimes prevent secondary symptoms. He did not treat phagedæna with mercury. 'The worst forms that syphilis can produce, are so produced by the help of mercury, when it is carried too far, or so given as to injure severely the system of the patient. The effects are much worse than would be produced by syphilis alone. I am sure,' says Sir J. Paget, 'that I have seen persons who have taken no mercury, suffering from the worst effects of syphilis, in ulcerative disease of the bones; on the other hand, the largest number of those whom I have seen suffering from the worst effects of syphilis, have been those who have taken mercury for the treatment of syphilis, and in whom the mercury has produced unfavourable effects.' If syphilis is left alone, the patients may spontaneously recover; but the severity and duration of the disease is diminished by mercury. Mercury had, in some few instances, produced bone disease, very

much like syphilitic disease, in persons who had not had syphilis. Should expect a patient to be well in three months after taking mercury. Iodide of potassium was useless in primary syphilis, and of little use in the early scaly eruption; for the periosteal pains and ulcers of integuments, it would almost certainly cure them more quickly than mercury, but relapses appeared. The late *Sir W. Lawrence* said he had great faith in iodide of potassium in tertiary symptoms. The giving of mercury was formerly a serious evil of itself. The patients were all salivated, and hence the name 'foul wards' of Saint Bartholomew's. In bad ulcers of the throat, cinnabar fumigations were formerly used, but had been abandoned for some years, as iodide of potassium came into vogue.

Mr. Savory had seen a large number of cases of syphilis treated without mercury, and, speaking broadly, the majority sooner or later got well. His impression was that mercury, judiciously given, tended as a rule to shorten the course of the disease; but the rule had many exceptions. He spoke with great diffidence, as there was much evidence on the other side. *Mr. Erichsen* gave mercury for *all* primary sores, except the phagedænic; but did not remember any cases where secondary symptoms have been prevented by such treatment. Expected mercury to lessen the severity of secondary symptoms. Iodide of potassium was very beneficial in osteal and periosteal swellings and pains.

Sir William Jenner said he treated all syphilitic children with mercury, and a large proportion thus treated got well. Grey powder was what he used. He never saw ill effects from mercury in children, except bowel complaint. The result of treating children without mercury was most fatal. He preferred treatment by mercury so much, that he 'should consider himself guilty of the murder of a child, if he treated it without mercury, and it died.' *Dr. Arthur Farre* said he always employed mercury in infantile syphilis. Syphilis in infants was one of the most easily cured complaints, provided the treatment were commenced early enough. One or two grains of grey powder at night, cured easily enough about three-fourths of the cases which came before him. It was difficult to treat them when atrophy has commenced: then the difficulty of treating by mercury alone was very great, and he was obliged to employ tonics and sarsaparilla in such cases. Gave the grey powder from three to six weeks. When the child had had syphilis many

weeks or months, he preferred iodide of potassium to mercury. *Dr. Barnes* used in syphilitic infants, two or three days after birth, equal parts of nitrate of mercury ointment and spermaceti ointment, about the size of a walnut, on a flannel band, worn round the waist for two or three months. Had known many women who had given birth to healthy children, after a course of treatment partly during pregnancy, and partly in the interval before conception had again taken place. The iodide of potassium was here sometimes of value.

Dr. Bidenkap said he used syphilisation for infantile syphilis. A great number of such infants died; but the mode of treatment was better than any other, even in infantile syphilis. *Mr. R. W. Dunn* said he used to lose one in every five or six patients, when he used mercury for infantile syphilis; but recently he had treated fifty-three cases with tonics, with only three deaths. *Mr. W. Allingham* said, that of seventeen cases of infantile syphilis, treated by Dr. Griffiths with mercury and chalk, nine were cured, four died, and four were not seen again. After 1862, he (Mr. A.) treated such cases without mercury and with tonics; and of forty-eight cases so treated, six had died, all of them being under three months of age.

Mr. Berkeley Hill, in his able treatise 'On Syphilis and Local Contagious Diseases' (1868), expresses himself in favour of mercury in the form of blue pill in indurated sores and secondary symptoms, and uses large doses (sometimes as much as eighty to a hundred grains) of iodide of potassium daily in ozæna or tertiary cases. His treatise, however, is so valuable, that all should consult it for themselves.

Mr. Henry Lee's opinions unfortunately, were not given to the Admiralty Committee; but in his classical 'Lectures on Practical Pathology and Surgery' (1870), vol. ii., he says, 'In practice it may be convenient to give mercury internally; but it can rarely be borne long enough in this way to cure the disease. When the eruption occurs under these circumstances afterwards, it presents often a troublesome and worse form of disease than if no mercury had been given. Iodide of potassium has a considerable power in removing syphilitic eruptions and other forms of secondary and tertiary syphilis; but it does not cure the disease.' In company with Mr. Prescott Hewitt, Mr. L. Parker, and others, he is greatly in favour of the 'calomel vapour bath.' He treats all cases of syphilis by volatilising calomel by

means of a spirit lamp, the patient sitting on a cane chair enveloped by a blanket. The steam of hot water accompanies the calomel vapours. The patient inhales the vapour for half a minute, whilst taking the bath. Dr. R. McDonnell, in a work entitled 'Lectures and Essays on the Science and Practice of Surgery' (1871), page 80, says, 'In fact, patients cured by the calomel vapour bath are cured by non-mercurial treatment. I am now satisfied that calomel used in this way has no specific effect. It is not absorbed by the unbroken skin. It is simply the vapour bath acting beneficially on a malady which has a natural tendency to get well of itself.' Of course, Dr. McDonnell would not say this in the case when the vapour is inhaled, as Mr. Lee seems to recommend.

In a lecture on the treatment of syphilis, delivered in the month of August, 1871, at the Lourcine Hospital, and listened to by the author, Dr. Alfred Fournier observed, that the physiological school and many other writers had spoken against the use of mercury in syphilis. 'Some say that the disease is a mild one, and that mercury is in general not indicated. But the very patient under our notice may have disagreeable symptoms, such as skin eruption, alopecia, neuralgia, iritis, with sarcocele. Gummy tumours and paralysis may occur in any given patient. The patient before us may die of cirrhosis of the liver, or have exostoses on the bones. This is surely not a benign malady. The patient asks us for a remedy, and we must try something. Opponents of mercury in some cases say, if you have a severe syphilis, treat it, but leave slight syphilis alone! Now, if we could prophesy that any given case would prove benign, it would, of course, be unnecessary to treat it; but when we try, we find we cannot prophesy as to the nature of any given case of syphilis from the nature of the early symptoms. Hence prudence should make us always treat patients. There are eight hundred women who take mercury at the Lourcine Hospital, in the course of one year; and yet, only one or two of these suffer. If we give mercury in over doses, it may do much harm.

'In iritis,' says Fournier, 'mercury makes the inflammation subside rapidly. Psoriasis and neuralgia, when syphilitic, are very curable by mercury. Does mercury act on the diathesis? This has been most of all denied, and persons have said that mercury makes the patient pale, but leaves the disease. Mercury, however, *has* an influence over

the whole disease. In fact, what do we observe in patients treated carefully by mercury? Only some superficial symptoms, for the most part, some slight alopecia, etc. What becomes of the patient if the disease is not treated? In the first place, we often notice complete alopecia. We have, too, often enough, opportunities of seeing persons who have not been treated for syphilis. In such cases we find sometimes loss of the palate, and at other times vision is lost. I say that a doctor who has seen such facts and yet does not give mercury, is wrong. Mercury and iodide of potassium are the two best remedies I am acquainted with. There is nothing grave, it is true, in the secondary accident—roseola; it is the future we have to think of, and we must protect our patients against future accidents. Opponents of mercury say, that there are frequent relapses after it. This is true, but these accidents consist only of slight eruptions. Sometimes truly there *are* grave accidents after mercury; but yet, if we count cases, we shall find many more severe accidents when it is not used.

Proto-iodide of mercury, in doses of five centigrammes per diem, may be given. When *ten* centigrammes are given, we must watch lest salivation be produced. Some patients can take one pill, but not more; and if five centigrammes suffice, it is not necessary to give more. This preparation is infinitely more useful than corrosive sublimate. How long should we administer mercury?

'Ricord,' said Fournier, 'advised six months of uninterrupted use of iodide of mercury. These absolute prescriptions have much contributed to discredit the use of the drug. We must first of all remember that syphilis must be treated for a long time. Mercury should not be given uninterruptedly; the system will get accustomed to any remedy, and it gets tolerant of mercury. Hence, treatment should be successive. If a patient have any particular symptom, treat him for it only for two months. Renew this again after a time for a month, and attend to the idiosyncracy of the patient. The total duration of treatment should be two years, six or eight months of which should be mercurial treatment. For the later periods, iodide of potassium is *the* remedy. Tertiary accidents may occur under all methods of treatment. We must, therefore, tell patients this truth, for it may be of great service for them to know it in the course of twenty, thirty, or indeed forty or fifty years. The patient may have, after all this time, some

paralysis or other symptoms, which it is important above all for him to be aware may have some connection with syphilis. Tertiary accidents are constantly misunderstood; and the great cure of such accidents is the iodide of potassium.' As before stated, Lancereaux and others at Paris are entirely opposed to the long systematic treatment of Dr. Fournier.

In a pamphlet, entitled 'De la Syphilide Gommeuse du Voile du Palais' (Paris, 1868), Fournier, speaking of a case of gummy tumour with perforation of the palate (page 86), says, 'You know the medication we have used in this case. It consisted: first, in the administration of iodide of potassium internally; second, in iodine gargles (water eight ounces, iodide of potassium and tincture of iodine in equal parts of thirty grains); third, in daily painting the ulcerated parts with a hair pencil dipped in tincture of iodine. You also know what rapid and marvellous success this medication has given us. In fact, gentlemen, the great remedy—the remedy *par excellence*, in gummy syphilides in general, and in that of the mouth in particular, is iodide of potassium. Not only is it necessary that you should know that iodine is a splendid remedy in such cases, but I have it more at heart that you should well recollect this, that it is the *sole remedy to which it is prudent*—I would willingly say, *to which it is lawful*—to have *recourse* in cases of gummy syphilide of the palate. Mercury is here not inefficacious; but a hundred times less active than the iodide; and, at any rate, *too slowly* active for us to trust to it in a disease where instants are counted, where the slightest delay in curative action may bring about the rupture of the velum. It is not sufficient to give iodide of potassium, we must give it in its proper dose, a dose suitable for a lesion of this kind. It is indispensable in cases of this nature, especially in those where the evil is already advanced, to strike a great blow immediately, and to administer the iodide at once in large doses. 'Do not hesitate,' M. Ricord was wont to say to us in his clinical lectures; 'give the iodide immediately, and give it *largâ manu*, for all hesitation, or delay, or timid intervention, may result in an irreparable perforation.' If we proceed by small doses, if we content ourselves with thirty, forty, or fifty centigrammes (six, seven, or eight grains) a day, the remedy does not act—or at least not enough, nor rapidly enough to prevent the imminent danger. It is timidity and hesitation which brings on the rupture of the velum.

'At once, then,' says Fournier, '*we must* prescribe a really

active dose; two or three grammes on the very first day (thirty to forty-five grains); and even if, on the following days, the disease do not appear sufficiently influenced, the daily dose of the remedy must be raised to four, five, or six grammes (sixty, seventy-five, or ninety grains). Doubtless, under the influence of such doses as these, the patient may present some of the phenomena which make up what is called by some *iodism*, such as coryza, running of the eyes, headache, or slight ptyalism, etc.; but what are these inconveniences, in face of the danger which is impending? The patient may be too happy if, at this price, he may avoid a deplorable infirmity. Besides which, the disagreeable effects of iodide of potassium are not always in proportion to its dose. There are some patients who, with seven grains of this remedy, experience symptoms like those produced by a dose four or five times as strong. One patient cannot take a few grains of the iodide without iodism, whilst another takes large doses without experiencing the slightest symptom. You have a proof of this before your eyes. One patient, to whom, on the very first day, we prescribed a dose of two grammes (thirty grains) of the iodide daily, and then of three and four grammes (forty-five, sixty grains) on the following days, never complained of the slightest painful symptom. And her neighbour in the next bed, who took eight grains a day, presented all the symptoms of the most intense iodism, frightful coryza, running of the eyes, swelling of the parts around the orbit and face almost like erysipelas, headache, sadness, etc. I may add, were the phenomena of iodine more intense and more serious than they really are, there would be still no room for hesitation. Even in this hypothesis, we should be obliged to neglect them, and give the iodide in *large doses;* for it is only by paying this price that we can prevent a grave lesion, too frequently irreparable. Learn this well, that the two dangers, the two real causes of want of success, in such cases, are a too tardy intervention, or a too timid administration of iodide of potassium. Give the iodide as soon as possible, and in large doses, *largâ manu;* here is the true secret of the treatment and the key to success.' The author heartily agrees with Dr. Fournier on this point.

With regard to Dr. Fournier's treatment, Dr. McDonnell, President of the College of Surgeons of Ireland, used to scout the notion that the omission of mercurial courses tends towards the production of tertiaries (see also Diday, 'Histoire

Nat.'); and, although not discarding mercury altogether in the treatment of syphilis or iritis, he very frequently indeed treats these maladies without any. In tertiary symptoms he uses large doses of iodide of potassium. With regard to the use of mercury in pregnant women, he believed this practice not at all proved to be beneficial; and observed generally that practitioners, who praised mercury in syphilis, were usually in the habit of treating *all* their cases with it, and hence fell into the natural error of ascribing the softening of an induration, or the fading of eruptions, to this agent, when, for the most part, these were the natural effects of time. Dr. McDonnell said of ozæna, that it is the most intractable of all the tertiary accidents; he used large doses of iodide of potassium in such cases, combined with the local application of the vapours of the biniodide of mercury. Iritis frequently did well with atropia drop without mercury (Oral Comm., Sep. 14, 1871.)

Treatment of Syphilis of Nostrils and Larynx.

In *syphilitic ozæna*, says Dr. Prosser James (note to the author), there may be merely hypertrophied mucous membrane, chiefly affecting the region of the lower turbinated bones. In tertiary syphilitic ozæna, inspection may only reveal a dusky hue of the mucous membrane, with erosions here and there. In persons of strumous character destruction will be most rapid. If the erosions can be seen in the rhinoscopic mirror, they should be touched with nitrate of silver, or iodine vapour may be inhaled. Dr. Thudichum's nasal douche is useful, and permanganate of potash lotions. Dr. James never uses mercurial washes, which he thinks 'so very dangerous, as to be likely to go out of use.' 'Nearly half the laryngeal cases in special throat-hospital practice,' says Dr. James, 'are traced to syphilis.' The epiglottis is often the first part to suffer, and it may even become wholly eaten away. The arytenoid cartilages are attacked later on in the disease. The dusky purple hue of the larynx in syphilitic erythema is well marked. 'It used to be said that laryngitis was the signal to pour in mercury; I prefer iodine and its salts.' Large doses of iodide of potassium must be given. Iodine vapour may be inhaled in ulceration of the larynx. Scarification should be applied in œdema glottidis, or, in some cases, tracheotomy should be performed, although if the rima glottidis be contracted, it may be neces-

sary for the patient to wear the tube always afterwards. Dr. James finds iodide of sodium useful in syphilitic cases; iodide of calcium also he thinks should be tried. Dr. Richardson praises sodium alcohol, formed by dropping the metal sodium into absolute alcohol, as a topical remedy in ozæna.

Dr. Morell Mackenzie ('Reynolds' System of Medicine, 1871, p. 465 et seq.), says he only observed mucous tubercles in the larynx twice in fifty-two patients suffering with secondary eruptions. They disappear under stimulating local treatment. The deep and extensive ulceration of tertiary syphilis may be accompanied by œdema, and followed by dangerous contractions. (Guy's Hosp. Museum, No. 1665–90). There is great dysphagia when ulceration is attacking the epiglottis; but when cured, the patient begins again to swallow with ease. When the walls of the pharynx are also ulcerated, the epiglottis may become united in a dangerous manner with the pharynx. Gummata of the tongue, pharynx, and larynx should be treated with iodide of potassium, in doses of five, ten, or, in some cases, twenty grains, in combination with ammonia, largely diluted with water; the ulcerated surface being touched daily with nitrate of silver fused on the end of a bent aluminium wire. 'This ulcerative process, though of the most active character, is almost always tractable under this treatment. In no stage of the disease does it appear to me,' says Dr. M. Mackenzie, 'to be necessary or desirable to use mercury.' Dr. Mackenzie adds, that in his experience the chronic laryngitis met with in syphilitic persons, associated as it generally is with chronic bronchitis, resists every kind of treatment.

Mr. Berkeley Hill thinks mercury of great use in syphilis. He quotes (*Lancet*, Oct. 28, 1871) from Bœck's 'Recherches,' a statistic of persons 'whose cases, untreated by mercury or other specific, allow us to observe the natural course of the disease. In 3,560 cases, 2,113 had cutaneous eruptions, 601 had affections of the fauces, 50 had iritis, 33 had affections of the bone, and 16 had gummy tumours.'

Treatment of Syphilis of the Rectum.

Mr. W. Allingham, surgeon to St. Mark's Hospital for Fistula, in a most scientific work on 'Diseases of the Rectum, etc.,' written in 1871 (Churchill, London), says:

'The origin of many fissures of the rectum is syphilis, and of all the varieties, it is the most amenable to general treatment. Many ulcers of the rectum are doubtless of syphilitic origin. They may be the result of either secondary or tertiary syphilis, but sometimes the ulceration of the bowel, with a syphilitic history, is the only symptom present. When the ulceration exhibits itself as a secondary symptom, we usually find condylomata around the anus, and only the mucous membrane of the rectum is affected; but when it occurs as a tertiary affection, the disease, I have reason to believe, primarily attacks the submucous connective tissue: the ulceration is consequently more severe in character and very intractable. The secondary ulceration of the mucous membrane yields readily to anti-syphilitic remedies; but this is not the case with the tertiary affection. I have frequently seen the best means devised fail to effect a cure. . . . . I have stated that syphilitic cases, where the ulceration is a tertiary symptom, are dreadfully intractable. I have not found much benefit to accrue from large doses of iodide of potassium, or from perchloride of mercury. I think iodide of potassium and sarsaparilla, long persevered *in*, do good in the end. I always use the fluid extract prepared after Squire's formula. I am bound to confess, that these cases do not, as a rule, get well. The most carefully carried out and best devised plans of treatment will fail more often than succeed, in consequence of the recurrence of abscesses and ulceration. Patients sometimes die from such causes. I am of opinion that some strictures of the rectum are syphilitic in their origin, and when they are the patients generally do well.' This prognosis in cases of rectal syphilis entirely coincides with my own experience of syphilis in women.

In the third edition of Mr. Allingham's work (Churchill, London, 1879), which the author has most kindly sent me, just as my last sheet is being passed through the press, I find some most important additions to the subject of syphilitic disease of the rectum. The author states that some forms of ulceration due to syphilis are amenable to treatment in the early stages; but that the time he refers to often passes by unnoticed by the medical attendant. In pages 226—229 he gives a table of 70 cases of ulceration and stricture, among hospital cases, 60 of which occurred in women and 10 in men. Of 65 of these, the causation was clearly syphilitic in 35. 'In some few cases, immense good

resulted from iodide of potassium and mercury;' but, on the whole, he 'places no reliance on specifics,' in the treatment, but has recourse to mechanical treatment. Among his private cases, Mr. Allingham mentions 19 women and 10 men with stricture and ulceration of the rectum. Of the 19 women, 7 were cases of syphilitic causation; of the 10 men, 3 were syphilitic. Summing up, he finds that 42 out of 79 cases in women were syphilitic in causation, and 10 out of 20 in men.

Mr. Allingham is opposed to the views of M. M. Gosselin, Desprès, and others in Paris, and of Dr. E. Mason of New York, who contend that the vast majority of strictures and ulceration of the rectum are due to contamination from *soft sores*. To corroborate his own view, that syphilis, and notably tertiary syphilis, is the real cause of these ulcerations, and not soft sores at all, he calls to his aid the opinions of Ricord, James Lane, Walter Coulson, Christopher Heath, Fournier, and, to a certain extent, Lancereaux. My own somewhat extended and long continued observation of such cases has led me entirely to endorse the views of the eminent surgeon from whose most important work I am quoting.

Treatment of Syphilis in Vienna.

In the *Allgem. Wien. Med. Zeitung.*, of October and November, 1871, Dr. Kraus spoke of the different methods in which mercury may be used in syphilitic patients. When the patient is too low for the inunction of mercury, baths of corrosive sublimate are useful in psoriasis and mucous tubercles of the genitalia. The latter, however, he treats topically, first touching with chlorine water, and then dusting with calomel. Baths of corrosive sublimate are either general or local. As to the hypodermic injection of corrosive sublimate, Dr. Sigmund wrote in 1869 that this way of treating syphilis effected but little in psoriasis or in gummata, and also that it was slower in its effects in early syphilis than inunction. The injection was made with a solution of twenty-four centigrammes of sublimate in thirty grammes of water. Infants were sometimes treated in this way; but calomel was preferred. One of the objections is the frequent inflammations of the skin and cellular tissue caused by this practice. These cause great pain. Abscesses of dangerous nature may follow subcutaneous injections of

sublimate. Occasionally the fluid gets into the circulation, and suddenly symptoms of poisoning follow (Nussbaum). Salivation is not uncommon.

Dr. Zeissl, it appears, used mercurial suppositories for a time in Vienna. The patient introduced them twice a day into the rectum, and stayed half-an-hour in bed after doing so. Equal parts (one gramme each) of stronger and milder mercurial ointment were made into suppositories with a gramme of cocoa butter. Salivation was caused in one experiment. Dr. Kraus thinks this method also unsuited for private practice. Fumigations have been praised by Acton, Parker, Ricord, etc., in old syphilis, such as ulcers of the throat and nostrils. Dr. Kraus has been disappointed in this practice. Three to six grammes of cinnabar are evaporated, and this is done every three or four days. None of the vapour is breathed. Local fumigation is made by a funnel.

With regard to iodine, Dr. Kraus says that iodide of potassium is of quite remarkable service in syphilitic periostitis, in gummata, knotty infiltration of the skin and mucous membranes, in cases of lupoid serpiginous ulcerations, and in visceral and cerebral syphilis; as also in hereditary syphilis in adults. He, however, says that in some cases of tertiary ulceration, inunction will produce a cure, when iodide of potassium has failed.

The last discussion on the treatment of syphilis with which I am acquainted took place in Philadelphia, on the occasion of the meeting of the International Medical Congress, in the year 1876. Two papers were read, one by Dr. Edward Keyes of New York, and another by the author, which were followed by an animated debate.

Dr. Keyes's most learned opening address touched first on the impossibility of prophecy in the early stages of syphilis. He thought there was a gradually spreading opinion among medical men in the States, that mercury was bad, and only to be used because syphilis was worse. Mercury, said Dr. Keyes, is not an evil. It is not debilitating, but tonic in health as well as in disease, when continuously used in minute doses. He therefore thought that it was right to use a course of mercury in *all* cases of syphilis, since a light beginning cannot be counted upon to signify a type of disease necessarily mild. 'All syphilis is severe and treacherous.'

With regard to the tonic effects of small doses of mercury,

Dr. Keyes said he had made some experiments to show that the number of blood corpuscles was increased by small doses of that metal. (*Amer. Jour. of Med. Science*, January, 1876). He had found that it increased the number of discs in syphilis, that it increased the weight of animals, and was a tonic to persons in fair health. Clinically he cited the value of corrosive sublimate in bark for scrofula. A favourite remedy in the States for Bright's disease was two grains of corrosive sublimate in one ounce of the tincture of the sesqui-chloride of iron. Ten drops of this contain one-fiftieth of a grain of corrosive sublimate, a tonic dose. Large doses of mercury, on the contrary, said Dr. Keyes, are very debilitating.

Mercury, continued Dr. Keyes, is not only a tonic, but is *antidotal* to syphilis, locally as well as generally. Every one, he says, admits that mercury can postpone and modify the earlier symptoms of syphilis, and M. Jullien's statistics (*Gaz. Heb.*, Sept. 18 and Oct. 2, 1874), which showed that the majority of patients with tertiary syphilis had taken mercury, were of little service, because the disease is so various in its forms. That mercury is useful in all periods of syphilis, said Dr. Keyes, is proved by its sometimes proving curative of tertiary symptoms when iodine has failed, although, as a rule, iodide of potassium is of great service in tertiary syphilis. It is also very valuable, he urged, in inherited syphilis. He concluded then, 'That mercury is of value during the whole treatment of syphilis—in minute doses throughout for its tonic and anti-syphilitic action; in larger doses, as the occasion arises, to suppress outcropping symptoms, the action here being purely anti-syphilitic and not tonic.'

Iodide of potassium, according to Dr. Keyes, is also a tonic, and it increases the number of the blood-discs in all periods of syphilis. Iodide of potassium, he thinks, undoubtedly has some modifying influence over syphilis in all stages, but not so much as mercury in the early stages. Nothing can replace iodine for gummy infiltrations, nodes, or ulcerations. Mercury should, however, be given to secure a final cure and prevent relapse, since iodide of potassium is not curative. The iodide of potassium is serviceable, he acknowledged, even when no mercury had been used.

With regard to the continuity of treatment, this is not necessary in the case of the iodide of potassium, which is

only useful (said Dr. Keyes) when symptoms are present. But as mercury taken continuously in small doses for as much as three years was found by him to increase the blood-discs, he gives long courses of it. Commencing from the period of the enlargement of the posterior cervical glands, he had, since 1869, usually kept up treatment continuously for two and a half to three and a half years, or even longer. He urged that the intermitting treatment of Fournier was merely symptomatic, whilst *his* plan was antidotal.

Dr. Keyes recommended that a dose should be given to a patient just sufficient to touch the gums, and that when the eruption was affected by it the dose should be halved, and given daily for years, waiting for other symptoms. Mercurial vapour-baths should be added if such symptoms supervene, or inunction may be used for a time. Iodide of potassium to be added in case of tertiary lesions, or disease of the brain. The mercurial tonic to be given for six months after the disappearance of the last symptom of the disease.

In the very valuable discussion which followed the reading of Dr. Keyes's paper, Dr. Bulkley of New York said that mercury was very injurious in gummy infiltration, with rare exceptions. Dr. Taylor of New York approved of the use of mercury in indurated chancre, to melt down the hardness. Too much reliance was often put on mercury in the later stages of the disease, when iodide of potassium was very useful. Dr. Bulkley also approved of mercury in hard sores. Dr. Taylor was convinced of the tonic qualities of mercury, and had found it useful in syphilitic pains and fever. In reply to a query, Dr. Keyes stated that iodide of potassium should be given in syphilitic joint disease, in nervous and other visceral affections, and in skin affections of the tertiary form. Dr. Bulkley mentioned that Dr. Mauriac had cited nine cases of bone-disease, where iodide of potassium had failed and mercury had to be given. Dr. Taylor, on this point, said that bone-disease, when supervening early, yielded best to mercury and the iodide combined.

Dr. Heitzmann of New York asked whether Dr. Keyes meant to assert that mercury would prevent relapses in syphilis. Dr. Keyes said he would not assert this absolutely. He could only say that his treatment was the most scientific, harmonious, and best. Dr. Heitzmann said he had tried this treatment, but had seen relapses under it. Dr. Taylor said that, after two or three years of mercurial treatment, a

patient was practically cured. Dr. Heitzmann expressed his uncertainty as to whether the cure of syphilis, when it took place, was due to art or to time.

Dr. Bulkley said he generally kept his patients under mercury from three to six months, then let one week drop in the month, then two weeks, or left them without any for a month. In reply to Dr. Taylor, Dr. Keyes said he gave from one thirty-fifth to one fiftieth of a grain of corrosive sublimate for years with perfect impunity. Dr. Taylor demurred to this system, on Fournier's plea, that the system becomes tolerant of mercury if used continuously. Dr. Keyes to this rejoined that tolerance is not established when only tonic doses are given. Dr. Duhring of Philadelphia had tried both methods, and saw advantage in both. He thought the intermittent plan, recommended by Dr. Fournier and Dr. Taylor, the best in practice.

After the debate, the following resolutions were agreed to by the members present:

Negative conclusions.—Views that are not founded on fact. 1. Syphilis, commencing mildly, needs no mercury. 2. Mercury given internally, is necessarily debilitating. 3. Mercury is only useful in secondary syphilis. 4. Iodide of potassium is of considerable value in secondary syphilis. 5. Iodide of potassium is of no value, unless preceded by the use of mercury. 6. Iodide of potassium acts by liberating mercury which has been lying latent.

Positive conclusions.—1. Mercury is an antidote to the syphilitic poison, and of service in controlling all its symptoms in all (even the latest) stages of the disease; its power over gummata being least marked, and not to be relied upon. 2. Mercury in minute doses is a tonic. 3. Iodine cures certain symptoms of syphilis, but does not prevent relapses. 4. The use of mercury, long continued, uninterruptedly as far as practicable, in small doses, from the time of the earliest eruption, constitutes the best treatment of syphilis.

This long-continued use of mercury has not as yet been, as far as I can ascertain, much experimented upon in Europe. It would seem from the debate that the most able specialists in the great Republic of the West are strenuous believers in mercury, and that they have become able to formulate their belief in a way capable of being assented to by their fellow-countrymen. No such unanimity as yet prevails in either France, Germany, or Great Britain.

In London, I cannot say that at this moment there is any school of mercurial therapeutics in syphilis, resembling that of Dr. Fournier in Paris, or that of Dr. Keyes in the United States. Practitioners, as a rule, administer mercury in the disease, but for no certain period, and merely, I think, when symptoms are present.

For my own part, I have seen many bad cases of syphilis under mercurial and non-mercurial treatment. I have seen iritis often supervene whilst the gums were sore from mercury, and have treated many cases without mercury with perfect success. So that it is now well known that hosts of cases of syphilis do well without mercury.

At the same time, it is now clear that mercury in very small doses does not damage the health, and, as there is a very great consensus of opinion as to its antidotal value in hard-sore and in true syphilis, the rational solution of this question would seem to be that mercury is only to be administered in these very small doses, and never pushed as it used to be.

Acting on this idea, I have personally, in an experiment at the Rescue Society of London, now lasting more than three years, employed a pill containing one-sixth of a grain (one centigramme) of the iodide of mercury, twice daily to the young female patients. This dose has never excited any unpleasant symptoms, such as salivation or diarrhœa; the patients have done well, and there have been few cases of iritis, tertiary ulcerations, or severe complications among them. The slight skin eruptions they have had have gradually faded. The mucous tubercles have been treated by ablutions and chlorinated lotions, or touched with nitrate of silver, occasionally.

Tertiary lesions have been usually very amenable to the iodide of potassium, so that I have rarely needed any mixed treatment in gummy tumours. In short, the mercurial treatment of syphilis is one which in many cases is of doubtful benefit, and which, if made use of, must not be expected to do too much.

Formulæ for Gonorrhœa and Balanitis.

All injections that smart are too strong.—(Berkeley Hill.)
All injections to be used thrice a day after micturition, and kept in three minutes.—(Hôp. du Midi.)

1. Injections.—One or two grains of chloride of zinc to the ounce of distilled water.—(Lloyd.) Used in all stages by some.
2. A drachm of liquor plumbi subacetatis to the ounce of distilled water. Used in the period of decline.
3. Two grains of sulphate of zinc in ten ounces of water, with a little laudanum.—(L. Parker.) Chronic stages only.
4. One drachm of tannin, with two drachms of alum in a pint of water.—(T. Smith.) In vaginitis and gonorrhœa in women.
5. Five grains of sulphate of zinc, with the same of acetate of lead, in one ounce of rose water.—(Ricord.)
6. Five grains of nitrate of silver to the ounce of distilled water as an abortive in the acute stage.—(Ricord.) To be used carefully.

Other Formulæ.

7. A drachm of bicarbonate of soda, one ounce of sugar, two drops of essence of lemon in a quart of water. For a drink.—(A. Fournier.) No beer or spirituous liquor of any kind to be used.
8. Camphor five grains, pulv. opii two grains, for a suppository in chordee.—(Teevan.) One third of a grain of morphia at bed-time.—(Fournier.)
9. Half an ounce of cubebs daily, or three drachms of copaiba daily. In chronic gonorrhœa, equal parts of copaiba and cubebs mixed, a piece the size of a hazel nut twice a day. Drink as rarely as possible.—(Ricord.) Rarely used in London.
10. Essence of sandal wood, eight drops, in a capsule. Ten capsules may be taken in twenty-four hours.—(Henderson.)
11. In balanitis, liquor calcis as a lotion, or the parts to be dusted with equal parts of powdered calomel and calcined magnesia.—(H. Lee.)

12. Two drachms of perchloride of iron in eight ounces of water as a lotion in prostatitis, by means of a perforated catheter.—(H. Lee.) Infusion of buchu one ounce, with five minims of laudanum, is useful in these cases.—(Hill.)
13. Rose water six ounces, alum and tannin, of each seven grains, with two ounces of red Bordeaux wine as an injection in gleet.—(Hôp. du Midi.)
14. Cotton wool sprinkled with powdered alum, or tannate of glycerine, in vaginitis.—(Mauriac, M. Sims.)
15. Two grains of corrosive sublimate, dissolved in one ounce of tincture of the perchloride of iron. Dose, ten drops. —(Dr. Heyes of New York.)
16. Green iodide of mercury, one sixth of a grain; extract of hyoscyamus, two grains, for a pill.—(London Rescue Society's Lock Hospital.)
17. Five grains of iodide of potassium; one fluid drachm of liquor hydrargyri perchloridi, in one fluid ounce of camphor water.—(Metropolitan Free Hospital.)
18. Bichloride of mercury, one part; water, nine hundred parts; rectified spirits, one hundred parts.—(*Van Swieten.*)
19. One drachm of iodide of potassium; six ounces of syrup of orange peel. Dose, half a fluid ounce.—(Nelaton.)

THE END.

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